Currency Inflation and Public Debts

An Historical Sketch

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With a Prefatory Note

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Prefatory Note

Currency inflation and public debts form a vexing problem which has called forth the liveliest discussion not only in the ranks of economists, but also among business people who find in the fluctuations of the foreign exchanges a constant reminder of the financial difficulties which confront the world. In asking Dr. Seligman to prepare for our enlightenment an historical sketch of currency inflation and public debts, we believed that a study of the past might well help us to understand better present-day conditions. Dr. Seligman's timely paper and his conclusions drawn from the lessons of history have encouraged us to present here, under the guise of a prefatory note, a few observations.

1. As is clearly pointed out, there is no such thing as a medium of exchange, money or currency which is not subject to fluctuations in value; gold, silver, copper, all fluctuate. Fiat money fluctuates not merely in accordance with the laws of supply and demand; the determining factor of its fluctuations is to be found in the credit of the issuing nation, and as every emission of such currency is the consequence of impaired national credit, it is, in effect, a step on the road to the possible repudiation of existing debts. As a consequence each step towards repudiation affects adversely the class which has invested its savings in obligations solvable in the forced currency, while it has a contrary effect upon the debtor class. For instance, the borrower of, say, one thousand Austrian crowns which before the war represented, we will say, one hundred days' labor, may now repay the debt with one day's labor.

But if such obligations were to be ultimately redeemed at par all the steps previously taken on the road to a possible repudiation would have to be retraced. The important thing to remember is that, in retracing the steps when the currency has been permitted to depreciate for the length of time and to the extent that has

taken place in Europe, the debtor class is made bankrupt through the process of reëstablishing the value of the currency just as the creditor class is injured by the depreciation of the currency; but it makes a vast difference in democracies, where the majority rules, "whose ox is gored." One thing seems clear, however, that, intrinsically, lands, buildings and other tangible property are only temporarily and indirectly affected one way or the other, inasmuch as their transferable or market value merely registers the corresponding domestic value of the medium of exchange.

2. The pound sterling would be at parity with the American dollar even though not convertible into gold (except as affected by the balance of trade), provided the British Government debt were in a fair way to progressive liquidation. The same is true of the French franc. The trouble with these forced issues is that they are mere evidences of the fact that the credit of the nation is impaired, and it may be argued that the pound sterling and the franc will resume their upward trend to parity only when and so long as the national debt continues to decrease or the national wealth to increase.

3. A stable currency, that is to say, a currency based upon its interchangeable value with gold at parity, however desirable, does not seem to be essential to free commercial interchange of credits and commodities.

It is within the experience of the present-day banker and exporter that business was safely and constantly conducted, between Colombia and Mexico, for instance, on the one hand, and the United States on the other, in spite of the fact that in the case of Colombia the value of its paper currency had fallen progressively to the extent of 99-100's of its gold standard, and in the case of Mexico the paper currency had been entirely extinguished. The fact is that a country which has no currency whatever, or the currency of which is totally valueless, can nevertheless conduct and engage in

foreign trade just so long as it has something to export. Under such circumstances the currency used must of necessity be foreign currency, and foreign countries can deal with the nationals of countries whose currency is valueless, and deal safely, so long as the integrity of the persons with whom they transact business is sufficiently established and those persons are in control of exports sufficient to enable them to obtain foreign currency having an established value. This is precisely the method now pursued by the Austrian, German or Polish manufacturer who is dependent upon the importation of foreign raw materials for the conduct of his business.

4. The extraordinary currency inflation of the various late belligerent governments of Europe is setting up new and wholly factitious channels of world trade. Temporarily at least the trade of those nations having currencies nearest to so called parity is being violently wrenched from them by the industrial nations which are recklessly hurrying along the road to extreme inflation and financial ruin. The reason for this lies primarily in the fact that the purchasing power of the depreciated currency is for a time much greater at home than abroad during the progress of its depreciation, particularly when prices of vital necessities such as food, housing and transportation are controlled and fixed below cost of production and the government absorbs the loss by the further issue of currency. In other words, the home currency will buy more labor and domestic raw material combined for export purposes than the quoted international exchange would lead one to believe.*

*"Owing to the rise in cost of living, agitation for higher wages is general, but strikes are few, as 'boom conditions' enable manufacturers to grant demands of their laborers. Socialists have presented a plan for compilation of regular Federal wage statistics. At the beginning of November the average of nominal wages had risen thirteen-fold compared with 1914."—*Berlin Correspondent New York Times, November 21, 1921.* At the same time the international value of the mark in which the wages are paid was but one-seventieth of its value in 1914.

As to Germany, the question is frequently asked, is her progressive inflation part of a sinister scheme to avoid obligation, or, as stated by the German Minister of Reparation, a catastrophe resulting from the sale of the mark as a commodity in order to obtain the necessary means of affecting the reparation payments? In either case, where will it all end, and how can this miserable business be brought to a conclusion? An English economist, Mr. A. E. Zimmern, in a recent article on "Greek Political Thought," says:

"France, emerging nerve-racked from a fifty years' obsession and a five years' nightmare, half dead with sorrow and suspense, yet too proud in victory to own her weakness, looks round, half defiant, half wistful, among her allies for one who can understand her unspoken need, and longing with all the intensity of her sensitive nature to be able to resume, in security and quietness of mind, the arts and activities of normal life in which she has been, and will be again, the Athens of the modern world: Germany, tougher in fibre than her western neighbor, yet equally shaken and exhausted: a land of sheep without a shepherd, rushing hither and thither seeking a direction and a Weltanschauung, her amazing powers of industry and concentration and her rich and turbid life of feeling running to waste for lack of channelled guidance."

How can any nation be expected to clean house and start afresh until certain essential conditions have been established? Dr. Seligman does not undertake to answer these questions. They belong to the realm of politics and statesmanship. How, for instance, can France be expected to relax her hold upon Germany until she, who for over forty years lived under the constant fear of invasion; who suffered most when war occurred and invasion came; until she feels a sense of security either through an effective international guaranty or otherwise? Are the statesmen of the Allies equal to the

task? Can they lead their peoples to adopt a course of conduct which, though vitally necessary, may seem (but only at first blush) inimical to self-interest, involving as it would the surrender of undoubted rights and the assumption of new and unaccustomed obligations?

The peoples of Europe are still a-quiver, but in spite of righteous anger, in spite of apprehension which cannot easily be brushed aside, deeds have been performed and words have been spoken which we sincerely hope bear the promise of better times: The Italian families welcoming, on the very morrow of the armistice, the little famished children of Austria, or M. Briand recognizing in Washington Dr. Wirth's loyalty and frankness, are gestures of widely differing character, significant in showing that real peace is far more than the mere formal signing of a treaty. Neither should it be forgotten that in Spa, in Wiesbaden, in Geneva, the first bricks have been laid for the reconstruction of what Signor Nitti so happily termed "a whole Europe." *Bis vincit qui se vincit in victoria,* he twice conquers who conquers himself in victory.

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* *

Dr. Seligman's paper is, it must be admitted, not conducive to optimism, but to our mind its austere and clear outlines convey a lesson which should not be missed. The nations surveyed have all, at various times, suffered from the most deadly financial and economic diseases, but they all survived, in fact all of them were flourishing and prosperous on the eve of the Great War. Less than one hundred years after the stupendous madness of the assignats, France becomes Europe's banker; half a century after the Risorgimento Italy develops into a power of the first rank; Germany a *geographischer Begriff* at the beginning of the nineteenth century, is an ironclad em-

pire at the beginning of the twentieth. . . . The greatness of nations is not to be found solely in metallic reserves and balancing budgets: The iron fields of Lorraine, the beauty of Paris, the intelligence and courage of the men and women in the fields of France, are not all these to be put down to France's credit in the Grand Livre de la Dette Publique? Italy is electrifying her railroads and ere long the water-falls of her own Alps and Apennines will give her all the power she needs and free her from servitude to the English collieries. So astounding an industrial resurrection may well lessen the hardships following in the train of the reëstablishment of the depreciated currency. Germany is confronted with serious perils; given every possible consideration under the existing treaty, the measure of her recovery depends largely upon the qualities of order, thrift and discipline to which her nationals have been trained for generations, but to this must be added a corresponding loyalty to her new political régime which thrusts upon the people wholly unaccustomed civic responsibilities.

Europe must be given a true peace capable of bringing back faith in the future, without which her most strenuous efforts must remain sterile. Europe cannot live without a peace full of serenity, without good-will among its several nations; there is not one nation in Europe which can live without the good-will of the other nations. Talleyrand said: *"Pour moi, les vrais intérêts de la France ne sont jamais en opposition avec les vrais intérêts de l'Europe."* Thus spoke the greatest master of French diplomacy, and his splendid dictum should be the motto of every diplomat, of every statesman in the world: "The true interests of my country are never in opposition to the true interests of the world."

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Currency Inflation and Public Debts

I

Introduction

Among the problems of private and public finance there are three which have recently become of paramount importance: the growing burden of taxation, the sudden changes in price levels, and the instability of the currency together with the dislocation of the foreign exchanges.

The first problem is intimately connected with the growth of public indebtedness. The utilization of public credit is essentially a modern phenomenon. Public debts do not go back more than a century or two, and it is only in very recent times that they figure largely in economic life. Public credit has been utilized in increasing measure not only because modern business life lays continually more stress on credit, but also because under the dynamic conditions of a rapidly augmenting national wealth the weight of a given public debt tends gradually to diminish. Public credit is not only a natural, but within bounds a salutary, phenomenon. Public debts are in reality nothing but anticipated taxes, and if the distribution of the holdings of the debt were exactly equal to the distribution of the weight of taxation, public debts would constitute no burden on the community: for every dollar paid by the individual in taxes would be compensated by the dollar received by him in interest.

Unfortunately, however, this exact correlation does not exist, chiefly for the reason that taxes are derived in part from other sources than the income of property. The taxpayers in a community are not by any means simply the owners of government bonds. The consequence is that at any given time a public debt may

constitute a burden on the community. Where the debts are relatively large, this burden assumes two forms: first, the interest and amortization charges may require the imposition of excessive taxes which hamper industry and check enterprise, thus diminishing the social dividend. Secondly, the public debt may, as at present in most of the European countries, consist in part of paper money, which in its depreciated state adds perceptibly to the economic burden.

The second problem of urgent importance is that connected with changes in price levels. It is needless to descant here upon the evils inherent in such changes. Whether it be a period of falling or of rising prices, whether it be a period of business lethargy or prosperity, there are always certain classes in the community whose welfare will be seriously impaired by the instability of the price level. Such changes in the price level are either periodic or occasional. The periodic changes are connected with what we have become accustomed to call business cycles, that is, fat years alternating with lean in a certain rhythmical movement—a period of business prosperity culminating in wild speculation and followed by a more or less abrupt industrial depression and perhaps a panic. Contrasted with this periodic change, we have occasional or more or less sporadic changes in the price level. Such changes, again, may take the form either of protracted, long-time changes or of sudden, short-time changes. The protracted or long-time change in the price level is illustrated by the so-called revolution of prices in Europe in the seventeenth century, which was due to the opening up of the new world and the ensuing immense increase of gold and silver. It may be illustrated again by the rise of prices that took place in Japan a generation or two ago when the old-time economic system was supplanted by modern industry and the growth of banks. On the other hand, short-time or sudden changes in price levels

are engendered by such convulsions as war as well as by the use of paper money, itself frequently associated with the demands of war.

Of these three forms of price changes, the periodic, the protracted and the sudden, only the last interests us in this place. For it is primarily in connection with this topic that there arises the problem of inflation and of deflation. This brings us to a consideration of the connection between inflation and instability of the currency.

In considering then, in the third place, the question of currency instability, we must distinguish between inflation and the rise of prices. The one is not necessarily synonymous with the other. Since by the price of anything we mean its money value, the general price level denotes the values of goods, commodities, and services, expressed in terms of money and the medium of exchange. An alteration in the general price level accordingly means a change in the relation between goods (including commodities and services) on the one hand and money (including credit) on the other. Obviously, however, such a change in the relation may be ascribable, in its origin, to either of the two elements, the goods or the money. Fluctuations in the general price level, in other words, may be due to causes originating with the goods or, on the other hand, to causes originating with the media of payment. Our recent experiences have made us familiar with the fact that wars in themselves engender a rise in prices through changes in the conditions of production and consumption. In the Great War, for instance, the ordinary production of commodities was suddenly curtailed by the drafting of the workers into the army and by the diversion of capital and enterprise into the production of war materials. On the other hand, the demand for the basic products in the metals and the textiles was immensely enhanced by the stupendous needs of the government

and by the gigantic outlay for the unproductive purposes of war.

This diminution of supply coupled with the enhancement of demand was the fundamental factor in the rise of the price level. But this could of course not have been accomplished without a corresponding increase in money and the media of payment. To the extent that the increase of money and credit kept pace with the dislocation in the conditions of production and consumption, there was a rise of prices without there being any inflation. As soon, however, as this correlation was disturbed, and the amount of money and credit exceeded this point, inflation occurred. For inflation means the existence of a currency in a quantity larger than is actually needed to carry on business transactions at a normal price level.*

But not only must we distinguish between expansion and inflation; we must also distinguish between inflation and depreciation. Where, as in the United States during the recent conflict, the increase in the media of payment assumed the form first of the growth of coin due to the great influx of gold from abroad, and later of the expansion of credit rendered possible by the adoption of the Federal Reserve system, there was inflation without depreciation of the currency. But where, as in Europe, the printing presses were utilized and paper money was issued in continually greater quantities, the inflation associated with the immense

*The familiar distinction between expansion (or rise of prices) and inflation is well put by Paul Warburg: "As long as reserve balances are created and circulation is issued only against self-liquidating paper, which represents things in course of production, and as long as this process is kept within a safe relation to gold, there may be more or less acute banking expansion, but there would not be any cause to call it inflation. It is when bank loans, reserve balances or circulation are being created against things that do not represent any tangible value, and gold reserves are disregarded, that we face inflation in its classic form." P. M. Warburg "Inflation and High Prices" in *Proceedings of the Academy of Political Science in the City of New York,* vol. ix, no. 1, 1920, p. 119.

rise of prices was signalized by a depreciation of the currency.

Several points, however, deserve emphasis here. We must distinguish between paper money proper and paper currency. A paper currency may be composed of convertible bank notes, like our national bank notes, or Federal Reserve notes. Paper money proper, on the other hand, is government money or so-called fiat money. Where government paper is redeemable in coin, it does not differ, in essential respects (except in the matter of elasticity) from convertible bank notes. When, however, government notes are irredeemable, they constitute real paper money or fiat money, especially when they are invested with the quality of legal tender. In the same way, when bank notes become inconvertible and are similarly invested with the quality of legal tender, they are virtually indistinguishable from paper money proper. The Continental countries make a more precise distinction than we do, in differentiating between what they call legal tender and forced tender (*cours légal* or *corso legale* as compared with *cours forcé* or *corso forzoso*). By the *cours légal* or legal tender of a note they mean its legal receivability for taxes or public dues; by *cours forcé,* or forced tender, they mean the compulsion of receivability in payment of private debts. True paper money always involves what they call *cours forcé* (what we call for short legal tender), and this quality may apply both to the irredeemable government note and to the inconvertible bank note.

In so far as inflation of the currency with its attendant excessive rise of prices is due to the issue of paper money in the form of either irredeemable government notes or inconvertible bank notes, inflation is equivalent to depreciation of the paper money. This depreciation may register itself either in a positive premium on gold in the internal transactions of the

country, or in an alteration in the rate of foreign exchanges, whereby more units of the internal paper are required to purchase a given quantity of the foreign unit. The difficulty of the problem, however, is found in the fact that fluctuations in the rate of exchange are due not only to currency inflation but also to alterations in the balance of trade. In fact there is often a reciprocal influence between the two. Moreover, the rate of depreciation or the amount of the gold premium is frequently affected by the psychology of the situation involved in the general economic prospects of the community and the credit of the government.

It may therefore be said that while inflation, so far as it is reflected in the depreciation of paper money, is due primarily to the relative quantity of the issue, the depreciation is also influenced by the changes in the balance of trade and by alterations in the general economic conditions, including the budgetary situation and the balance of revenues and expenditures. This last point again is intimately interwoven with the facts of the public debt; for it is primarily the increase of the public debt, due to the inability of establishing an equilibrium between government income and outgo, that is responsible for the issue of paper money and therefore in part for the inflation. While we must distinguish, therefore, between a rise of prices and a depreciation of paper money, in the sense that a rise of prices may be due to a fall in the value of gold, which may occur where there is no paper money at all, it yet remains true that where recourse is taken to the issue of paper money the dangers of inflation and of depreciation are much accentuated.

Because of this close connection between currency inflation and public debts, we propose to present a short sketch of the history of these phenomena, in order to form a basis for conclusions applicable to the present world situation.

II

THE EIGHTEENTH CENTURY

A. The American Colonies

The two earliest examples of inflation are those of America and France. The American colonies were so ill provided with coin, as a result of the economic conditions of a primitive community, that each in turn experimented with issues of bills of credit or so-called banks of paper money. The resulting depreciation engendered such a dislocation of trade and commerce that the mother country prohibited the further issue of these paper bills, in 1751 for the northern colonies and in 1764 for all the rest. The prohibition, justifiable in itself, was one of the contributing causes of the Revolution.

When the colonies declared themselves independent, the reluctance to even self-imposed taxation and the inadequacy of the help afforded by France and Spain led to the resumption, by both the Continental Congress and the separate states, of the old practice of paper issues. The continental bills of credit soon appeared in such large quantities that, although invested with the legal-tender quality and reënforced by an attempted limitation of prices, there soon ensued great inflation and a corresponding depreciation. As appears from tables 1-3 in the appendix, within a few years over 241 million dollars had been issued by the Continental Congress and a little later the state issues amounted to almost 210 millions, making a total of over 451 millions. In 1780 the Continental issues had depreciated to such an extent that they were now redeemed in new bills at the rate of 40 for 1. The "new-tenor" bills, however, soon went the way of the old notes, undergoing a progressive decline until by August, 1781, they were worth only 4 for 1 silver dollar, making the old bills

worth only 160 for 1. The old bills continued to circulate for a time at rates of from 500 or 1,000 for 1.

In the words of an eloquent contemporary: "Like an aged man expiring by the decays of nature, without a sigh or a groan, it gently fell asleep in the hands of its last possessors."* But as Horace White tells us: "A truer figure of speech would be that they passed out of the world like a victim of delirium tremens."†

The ravages committed by the paper money were so overwhelming as almost to beggar description. In the words of a remarkable contemporary: ‡"Thus fell, ended and died, the continental currency, aged six years; the most powerful state engine and the greatest prodigy of revenue and of the most mysterious, uncontrollable and almost magical operation ever known, or heard of in the political or commercial world. . . . Of all things which have ever suffered dissolution since life was first given to the creation, this mighty monster died the least lamented."

And as he puts it in another place: "If it saved the state, it has also polluted the equity of our laws; turned them into engines of oppression and wrong; corrupted the justice of our public administration; destroyed the fortunes of thousands who had most confidence in it; enervated the trade, husbandry, and manufactures of the country; and went far to destroy the morality of our people."

Another contemporary writes in 1789 as follows: "The evils of depreciation did not terminate with the war. They extend to the present hour. . . That the helpless part of the community were legislatively deprived of their property, was among the lesser evils which resulted from the legal tender of the depreciated bills

*David Ramsay, *History of the American Revolution*, 1789, vol. ii, chap. xvii.

†Horace White, *Money and Banking. Illustrated by American History*. Fourth edition, 1911, p. 103.

‡Pelatiah Webster, *Political Essays*, 1791, p. 175, note.

of credit. The iniquity of the laws estranged the minds of many of the citizens from the habits and love of justice. The nature of obligations were so far changed that he was reckoned the honest man who from principle delayed paying his debts. The mounds which government had erected, to secure the observance of honesty in the commercial intercourse of man with man, were broken down. Truth, honor, and justice were swept away by the overflowing deluge of legal iniquity, nor have they yet assumed their ancient and accustomed seats."*

And as a later writer adds: "The news gazettes were filled with complaints of injustice: ruin and lamentation brooded over one portion of the community unheeded by the remainder, which had become enriched at their expense. . . . America entered upon its career of a nation, bankrupt, faithless and perjured; crowned with the ruin of her best friends. At the distance of nearly a century the wrongs committed at the Revolution have not yet ceased to bear their fruit."†

The spurious prosperity occasioned by the high prices during the war soon vanished and turned into the contrary after the collapse of the paper money. During the eighties the suffering was extreme. Only with the greatest difficulty could the Revolution be brought to a successful close; while the ensuing business depression and universal distress well-nigh destroyed the very fabric of the state. So alarming was the situation that almost the first thing accomplished by the convention which framed the new constitution was to prohibit the issue of bills of credit by the states and to adopt a provision which was supposed to apply the same inhibition to the Federal Government as well. And when the national debt was funded in 1790 the remnants of the old paper money were accepted at the rate of

*David Ramsay, *Op. cit.*, vol. ii, chap. xvii.

†H. Phillips, Jr., *Historical Sketches of American Paper Currency*, vol. ii (1866), pp. 150, 176.

100 for 1. Thus came to an end an inglorious chapter in our fiscal history.

B. France

In France the eighteenth century witnessed two episodes of money inflation. The first was in connection with the famous Mississippi scheme of the audacious speculator, John Law, who succeeded, in the second decade, in securing control of the public finances. The paper bills which he issued soon degenerated from convertible bank notes into legal tender, irredeemable government paper; and there were issued of these, as appears from table 4 in the appendix, in progressively larger batches a sum which finally amounted to over 3,070 million livres. When, after a period of a most unexampled speculation, riotous extravagance, and illusory prosperity, the crash came in 1720, France was brought to the brink of bankruptcy and multitudes were precipitated into the abyss of ruin. As one of the contemporaries puts it:

> My shares which on Monday I bought
> Were worth millions on Tuesday, I thought.
> So on Wednesday I chose my abode;
> In my carriage on Thursday I rode;
> To the ballroom on Friday I went;
> To the workhouse next day I was sent.*

The second episode occurred during the revolution. When Montesquieu made his famous report in 1789 he estimated the public debt of France at about 1,186 million livres. In the face of this situation and the pressing needs of the treasury, Lecouteulx de Canteleu proposed the creation of the famous *assignats* or paper money based on the security of the lands of the clergy, which had just been confiscated. Although the original issue was restricted to 400 million livres, the fiscal pressure, due to the outbreak of the war, led to continually

*Cf. A. MacFarland Davis, "An Historical Study of Law's System" in *Quarterly Journal of Economics*, 1887, p. 452.

greater emissions. The forced loan of 1793 of one billion which was imposed, as the law read, "upon the selfish and indifferent rich," proved to be so inadequate that the limit of the *assignats* was now raised in the same year to 3,100 millions. Shortly thereafter, however, the limit was removed and by September, 1796, the issue of *assignats* had reached the prodigious sum of over 45½ billions. As in the United States, they had been made legal tender and had been accompanied by a limitation of prices, known as the *maximum*. But so great were the inflation and the corresponding depreciation that when they were replaced by the new bills, known as *mandats territoriaux,* they were redeemed at the rate of 30 for 1. The new notes, however, soon went the way of the old and by the end of the year their value vanished completely and they disappeared from circulation. The figures of issue and depreciation will be found in tables 5 and 6 of the appendix. As in the case of the United States, the suffering was incalculable and the real burdens were borne by the honest and patriotic.

In the words of the most recent historian of the episode: "It was now that there appeared in all their gravity the innumerable calamities, political, administrative, economic, military, moral and social, which inevitably follow the ever-growing issue of an irretrievably depreciated paper money: the ruin of the Treasury, crushed on the one hand by the insignificance of the revenues paid in paper of a nominal value, and, on the other, by the growth of the expenditures necessarily met (at least in large part) in actual values; the increasing difficulty of procuring food, the commodities more and more fleeing from a paper sunk so low; impotence and inertia of the administration, deprived by the worthlessness of this paper of all its means of activity; the melting away of the army, gradually destroyed by the misery into which it is plunged by the impossibility

of utilizing the money, and by the wholesale desertion which inevitably follows: the upsetting of fortunes; the sudden enrichment of all debtors, except the state, and the ruin of all creditors through the payment, in illusory values, of sums contracted for and expressed in real values; universal demoralization; fever of gambling and stock-jobbing taking the place of the love of work and the practice of thrift."*

In the same way the American historian, President White, after recounting in detail the various stages which led through apparent prosperity to economic collapse and utter ruin, describes the final and more subtle consequences as follows: "Just as dependent on the law of cause and effect was the moral development. In city centers came a quick growth of stock jobbers and speculators; and these set a debasing fashion in business which spread to the remotest parts of the country. Then, too, as values became more and more uncertain, there was no longer any more motive for care or economy but every motive for immediate expenditure and present enjoyment. So came upon the nation the obliteration of the idea of thrift. Luxury, senseless and extravagant, set in, and this, too, spread as a fashion. To feed it, there came cheating in the nation at large, and corruption among officials and persons holding trusts; and while the men set such fashions in business, private and official, women set fashions of extravagance in dress and living that added to the incentives to corruption. Faith in moral considerations, or even in good impulses, yielded to general distrust. National honor was thought a fiction, cherished only by enthusiasts. Patriotism was eaten out by cynicism."†

The memory of this ill-fated experiment was destined to preserve France for over a century from the repetition of any such scheme.

*M. Marion, *La vie et la mort du papier-monnaie.* Paris, 1921, p. 8.

†Andrew D. White, *Paper Money Inflation in France; How It Came, What It Brought, and How It Ended.* 1876. New ed., 1882, p. 44.

III
Great Britain

When the war with France broke out in 1793, the situation in England was fairly satisfactory. The public debt, due primarily to the Seven Years' War and the American Revolution, was some £239½ millions, and the paper currency which amounted to only £11 millions in bills of £5 and over, consisted of the well-secured notes of the Bank of England and the country banks. In the early years of the war, however, the revenues failed to keep pace with the greatly augmented expenditures and the deficit (£32 millions in 1795 and £36 millions in 1796) was made good by borrowing, largely from the Bank of England. In 1797 the poor crops at home, coupled with the commercial crisis which started in Hamburg, created such an apprehension of the loss of gold as to lead to the so-called bank restriction, that is, the Order in Council which restricted or restrained the bank from redeeming its notes in specie. Thus started the régime of inconvertible paper.

During the next few years three phenomena disclosed themselves. First, there was an annual budgetary deficit which had to be met by the contraction of fresh loans. Second, there was a rise of prices due primarily to the war which amounted to over fifty per cent by the year 1801. The index number, taking the year 1782 as par, rose, as appears from table 7 in the appendix, from 93 in 1792 to 153 in 1801. Thirdly, notwithstanding the suspension of specie payments, there was no very great increase in the paper currency, so that no depreciation appeared. The inflation, such as it was, was not primarily due, as yet, to the over issue of paper.

A few years later, however, the situation changed. By 1808-09 an era of speculation ensued and in the next few years the deficits were so great as to lead not only to a resort to fresh loans, with a consequent rise

in prices, but also to an increase in the Bank of England note circulation, which soon amounted to more than double the original issue. By the middle of 1810 the note issues were almost £25 millions. The index-number of prices now reached the high-water mark of 164 in 1810. Now also for the first time there appeared a premium on gold or, technically speaking, an increase in the price of gold. In 1809 the price of gold advanced to 90 shillings, which is equivalent to saying that one £ of notes would buy only about 107 grains of gold instead of the normal 123¼. The excess of the market price of gold over the mint price naturally reflected itself in the alteration of the foreign exchanges. This alteration in the rate of exchange was first ascribed by Ricardo to its true cause. The famous Bullion Report of 1810 clearly expounded the relation between the foreign exchanges, the depreciation of the currency and the suspension of specie payments. Although the government did not formally acknowledge the truth of this exposition, it did henceforth observe a measure of caution in the increase both of debt and of paper currency. The price of gold, indeed, again advanced in 1813, as well as after the escape of Napoleon from Elba. After Waterloo, however, the depreciation of the paper was slight.

With the gradual recession in the high level of prices after the war—the index number falling from 135 in 1818 to 106 in 1820—and with the return of more normal conditions in the equilibrium of the budget, it became possible to prepare for the resumption of specie payments. This was finally effected in 1821. The period of deflation, however, which followed the war was inevitably a painful one and, with the exception of the year 1818, the five-year period from 1816-21 was marked by the usual symptoms of business depression and discontent. The situation would have been far more unsatisfactory had it not been for the transition

of the economic life to the modern factory system which was now fast proceeding in England, and augmenting the surplus of production.

Great Britain, as a result of the war, was saddled with an immense debt of over £861 millions. An earnest effort was made to provide for the gradual payment of the debt, but the history of the nineteenth century showed that whatever little progress was made toward the sinking of the debt was almost completely counterbalanced by the resort to fresh loans as the result of successive wars. As appears from table 8 in the appendix, the debt which had been slowly reduced to £769 millions by 1854, shortly before the Crimean War, rose to over £808 millions as a result. In the same way, while the debt had again fallen to £628 millions by the end of the century, the Boer War caused it to rise to £770 millions by 1904. In 1914, just before the outbreak of the Great War, the debt of Great Britain stood at £661 millions, or only about one-fifth less than at the conclusion of the Napoleonic wars. Owing to the fact, however, that Great Britain had long since learned the desirability of financing its wars, to a certain extent at least, by taxation, there was never any occasion to take recourse to the further issue of inconvertible bank paper or irredeemable notes. There were, indeed, periods of speculation and high prices alternating with periods of depression and low prices. But these changes in the general price level were due to the cyclical price movements and not to any inflation or depreciation of paper currency. From the passage of Peel's Bank Act in 1844 up to the outbreak of the Great War the currency issues remained on a stable and satisfactory basis.

IV
FRANCE

France during the nineteenth century did not forget her sad experience with the *assignats*. Napoleon defrayed the expenses of all his wars by levies upon the conquered peoples, while the new system of taxation, adopted after the revolution, just about sufficed for the ordinary expenditures of government. The consequence was that the public debt increased only very slightly. The *rentes* (i. e. the annuities on the perpetual debt inscribed in the *grand livre* of the debt) amounted in 1799 to the insignificant sum of a litle over 46 million francs. By 1814 the debt had grown only slowly to a little over 63 millions. At that time, however, a series of deficits occurred and the Treaty of 1815 imposed upon France a considerable indemnity, payable to the foreigners. The result was that the debt amounted by 1815 to almost 1,300 million francs.

From that time, notwithstanding occasional efforts at repayment, the debt gradually increased. In 1825 a billion francs were added as an indemnity to the *émigrés* of the revolution. The deficits in the ordinary budgets accumulated and the war with Spain occurred, while Algiers became continually more of a burden. The consequence was that in 1830 the capital of the debt stood at over three billion francs. From the revolution of 1830 to that of 1848 the situation improved, the debt being increased by only 12¼ millions. Then came, however, the revolution of 1848 and the expenses connected with the abolition of colonial slavery in 1850. Moreover, with the advent of the second empire, the debt was now largely increased. At first there were a series of deficits. Then followed in succession the Crimean, the Italian, and the Mexican wars. During the reign of Napoleon III no less than 199 millions of *rentes* were issued, corresponding to a capital sum of

almost 6½ billions. Finally came the sad experiences of the Franco-Prussian War, with the 5 milliards indemnity; and this was now followed by a comprehensive plan of outlays for canals and railways, so that by 1884 there had been borrowed within about a decade over 361 millions of *rentes,* corresponding to over 7 billions of capital. These figures do not indeed represent the net increase of the debt, as the various sinking funds were continually in operation. But, despite this fact, both the funded and the unfunded debt of France steadily increased, so that by 1914, just before the outbreak of the Great War, the French debt amounted to over 32½ billion francs. Only a comparatively small part of this represented productive investments, almost the whole being due to war or to the accumulation of annual deficits.

During this entire period France was compelled to resort to paper money only twice. During the revolution of 1848 the temporary embarrassment of the government led to the suspension of specie payments by the Banque de France and the notes of the nine then-existing departmental banks were made inconvertible and legal tender. In 1849 the Banque de France was given the monopoly of note issue, but the limit of issue was now fixed at 350 millions. By the end of the year this was increased to 525 millions. The depreciation which ensued, however, together with the successful quelling of the revolution, induced the government in August, 1850, to abolish the legal-tender provision and to restore the convertibility of the notes. From that time on, the paper currency consisted of the convertible notes of the Banque de France.

The Franco-Prussian War caused a more serious situation. In August, 1870, after the government had borrowed large sums from the Banque, the bank notes were made legal tender. A moratorium was introduced and the limit of the notes issued by the bank was gradu-

ally raised. By the end of 1871 it was fixed at 2,800 million francs and by July, 1872, at 3,200 millions. Owing to the skill, however, with which the finances were managed in the matter of both loans and increased taxes, coupled with the marvelous recuperative power shown by the French people and the generally satisfactory economic situation, the depreciation was very slight, never amounting to more than about two or three per cent. The gradual improvement of the finances, moreover, made it possible to curtail the paper-money régime; and in 1878 the legal-tender quality was abolished and the convertibility of the bank notes restored. However, although the *cours forcé* (or what we call legal tender) was removed, the *cours légal,* or receivability for public dues, was continued.

France, therefore, emerged from its troubles with comparatively few scars. Although, as appears from table 9 in the appendix, the public debt grew continually larger, its increase was not greatly out of proportion to the growth of public wealth. As a consequence, while the future was not entirely without concern, the situation at the outbreak of the Great War was on the whole well in hand. France, like Great Britain, had traversed periods of speculation and depression, of cycles of high prices and low prices; but with the insignificant exceptions of the revolution of 1848 and the period of the Franco-Prussian war, French commerce and industry have had to suffer little from the evils of inflation or of deflation.

France and England are the only important countries which were substantially free from such evils during the middle and end of the nineteenth century. For almost all other nations have at one time or other succumbed. We shall now endeavor to pass in review the experiences first of the United States, then of the European continent, and finally, of South America and Japan.

V

United States

After the sad experiences with the continental bills of credit, it was generally believed that the dangers of irredeemable paper money had been averted by the new Constitution. Nevertheless, toward the end of the war of 1812 with England, the proposition was made in Congress to issue bills of credit; and had the war continued, it is not at all certain what the result would have been. In the Civil War, as is well known, the difficulties that confronted Secretary Chase in the matter both of taxation and of foreign loans were such that he saw himself compelled to resort first to the issue of demand notes and then at the opening of 1861, after the suspension of specie payments by the banks, to the irredeemable legal-tender bills soon known as greenbacks. Although he recanted later on, when he delivered his dissenting opinion in the celebrated legal-tender cases as Chief Justice of the Supreme Court, Secretary Chase succumbed to the usual temptation of improvident financiers and at the time declared the issue of the greenbacks a necessity. Inasmuch as more and more of these were issued and as, above all, it was not until much later that an adequate system of taxation was provided, depreciation soon set in. Chase, like many others, ascribed the premium on gold to the machinations of the speculators in Wall Street and it was not until later, when the passage of the bill to prohibit speculative dealings in gold suddenly forced the gold premium up to 285, that the futility of the gold law was recognized.

The great rise of prices during the war was, as in all such cases, due to three different sets of causes. In the first place, we have to note the dislocation of industry with a decrease in the number of laborers, many of whom had been called to the ranks. To this was

added the sudden demand for munitions of war. This revolution in the conditions of supply and demand would alone have explained a great rise in prices. Now, in the second place, came the immense war loans and the subscription to the public funds by the banks. The third reason is to be sought in the issue of the greenbacks and the consequent depreciation which, as will be seen from table 10 in the appendix, varied not only with the quantity outstanding, but also with the changing fortunes of war and the alteration in the general credit of the government. The net result was a very considerable inflation which, as in every period of rapidly rising prices, temporarily masked the evil results of irredeemable paper. $100 in currency were worth only $76 at the end of 1862, $62 by February, 1863, and $39 in July, 1864. The index number of wholesale prices, as appears from table 11 in the appendix, rose from 100 in 1860 to about 168 in 1863, to 215 in 1864 and to 219 in 1865.

As soon as the war was over, however, these evils became so manifest that Secretary McCulloch was able to outline his plan of rapid repayment of the debt and of thorough deflation. The debt of the United States which had virtually disappeared by 1835 and which then—owing to the Mexican War, the acquisition of Texas, and the panic of 1857—had increased to well-nigh $75 millions in 1861, now stood in September, 1865, at the high-water mark of $2,846 millions. The government paper of the United States consisted not only of the greenbacks to the extent of $433 millions, but also of $830 millions of seven-thirty notes and $218 millions of compound-interest notes, not to speak of the temporary certificates. In his famous Fort Wayne speech of 1866, Secretary McCulloch discussed the five objections usually advanced against deflation. These were that it would (1) produce a financial crisis; (2) reduce the public revenues; (3) endanger the funding

operations; (4) embarrass the national banks; and (5) affect the rate of exchange and reduce exports. Notwithstanding the triumphant manner in which the Secretary refuted each of these objections, the fall in prices which now rapidly ensued and which considerably embarrassed the business community, was ascribed, in part at least, to the policy of deflation or, as it was then called, contraction of the currency. Had it not been for the wise limitation of credit, which was practiced by most of the far-sighted business men at the close of the war, the drop in prices would have been far more catastrophic, perhaps leading even to a great panic. As it was, the suffering was notable, with the result that during the next few years the sound-money men were fully occupied in fighting the "rag-money" or fiat-money plans of the inflationists, who soon proved to be a formidable political force.

The ensuing decade may be divided by the panic of '73. During the first half, the boom times and the speculation which prepared the way for the crisis rendered possible the rapid reduction of the debt ($612 millions) and the remission of war taxes, with a resultant strengthening of the public credit and a fall in the gold premium to 110-112. During the second half, comprising the lean years after the crisis, the greenbacks which had been limited to the fixed sum of $346 millions slowly approached par as the wealth and resources of the country gradually increased. Finally, when a succession of good harvests toward the end of the period rendered possible the accumulation of an adequate gold reserve, the resumption of specie payments was effected in 1879. Thus came to an end one of the most unfortunate chapters in our history, in which the United States was ultimately able to extricate herself from a path upon which she need never have entered, and escape from which was due in the main to the gradual development of our immense natural resources.

VI
ITALY

No sooner had Italy achieved its unity in 1861 than it proceeded to put its fiscal house in order. The most urgent tasks were to provide for the construction of railways (of which only some 1,600 miles were then in existence) and to prepare for the inevitable war with Austria. A loan of 500 million lire was accordingly negotiated in 1861, calling for an annual interest payment of 35¾ millions. Notwithstanding the increase of taxation, it is not surprising that this debt had to be contracted on a basis of over seven per cent. A few months later, the debts of the former constituent Italian states were assumed so that the new Italian commonwealth started on its fiscal career with an annual interest charge of 144½ millions of lire, representing a capital of a little less than 3 billions (milliards).

During the next few years large deficits were incurred. In 1863 a loan of some 700 millions was issued on a 7.34 per cent basis, followed in 1864 and 1865 by still further loans, the last of which had to be contracted on an eight per cent basis. In 1866 the impending war with Austria created a crisis. A decree was issued, authorizing the national Bank of Rome to make a large loan to the government and directing the Bank of Naples to redeem its notes, including the so-called *fedi di credito* or certificates of deposit. On this basis the government now took over the paper and declared it legal tender, at the same time augmenting the issue to such an extent that by March, 1868, over a billion lire were outstanding. The consequence was a very considerable depreciation. As a result of the war with Austria and the assumption of a part of the papal debt, public loans and inconvertible paper increased from year to year. By 1874, the total issue of the notes of the six leading banks invested with the

privilege of issue amounted to over 1,560 millions. Moreover, as a consequence of the fall in the price of silver, there was now added to the depreciation of the bank notes a further depreciation of the legal tender silver money against gold.

In 1874 a determined effort was made to improve the situation. The six banks now formed a consortium or union which issued unified consortial notes (*biglietti consorziali*). These were loaned to the government at interest and were made legal tender to the limit of one billion lire. The six banks were also given the privilege of issuing their own notes to the extent of three times the amount of their capital, and of these notes 754 million lire were soon issued. These notes, although not having the *corso forzoso,* as had the consortial notes, nevertheless retained the *corso legale* or receivability for public dues and taxes.

During the next few years the fiscal situation improved only slowly. The debt actually increased. By 1870, as appears from table 12 in the appendix, the capital value of the debt was almost 8 billions and by 1876 almost 9 billions, the annual interest charge being respectively 394 and 438 millions. This increase represented, however, to no inconsiderable measure, productive investments; so that there was no greater net burden on the community. Moreover, by 1881, although the capital of the debt had been augmented still further, the annual interest charge was only 478 millions, or less than five years before. The government now resolved, in 1881, gradually to convert the consortial notes into government paper (*biglietti di stato*). Especially in 1883 it proceeded with its endeavor to secure currency reform and to introduce a gold standard.

The confident expectations of the government were, however, not realized and the conditions both of foreign and domestic politics, coupled with an economic situa-

tion which reacted unfavorably on the foreign exchanges, made it impossible to carry out the reforms. By 1892 the public debt had increased almost to 12 billions, with an annual interest charge of 573 millions. The government now even saw itself compelled to decree the irredeemability of the government notes and the inconvertibility of the bank notes. This fact, coupled with the recurrence of the annual deficits, caused a renewed depreciation of the paper money, the premium on gold again rising in 1893 to sixteen per cent and causing much uncertainty in business conditions.

From 1893 on, however, the situation began to improve. Three of the banks of issue were amalgamated to form the great Banca d'Italia so that henceforth the only banks of issue were the Italian bank, the bank of Naples, and the Sicilian bank. The new bank notes, adequately covered by gold, were deprived of their legal-tender quality in 1897, and the situation of the foreign exchanges was such that the premium on the government notes gradually diminished. At the end of the century the public debt was smaller than it had been in 1894, standing in 1899 at 12¼ billions of capital value and 580 millions of annual interest charge. By 1902 the gold premium had vanished entirely.

Italy had now finally come into her own and the economic outlook became continually more promising. Although the capital of the public debt had increased to over 13 billions by 1907, the annual interest charge had decreased, as a result of the fall in the rate of interest, to 577 millions. By the outbreak of the Great War of 1914, the public debt of Italy amounted to about the same sum—only slightly over 13½ billions, while the general economic conditions had materially improved and the currency conditions had been on a stable basis for over a decade.

VII
Russia

The history of Russian paper money begins in the second half of the eighteenth century. It was in 1768 that a paper issue known as *assignat* first appeared. At that time, under Catharine the Second, there was nothing but copper money in circulation. The new paper, of which only 20 millions of rubles were issued, without any legal-tender quality, was at first received with great favor. Shortly thereafter, however, came the war with Turkey and by 1790 when 100 millions of rubles were outstanding, depreciation began. By 1796, when 150 millions were issued, the silver ruble had risen, as appears from table 13 in the appendix, from 100 to 147 kopeks in paper, *i. e.,* the paper suffered a depreciation of almost twenty-five per cent.

During the Napoleonic Wars continually more paper was issued and although it enjoyed neither the *cours forcé* nor the *cours légal,* the paper ruble at the close of the period was now worth only 25 kopeks. The legal-tender quality was first affixed to the paper money in 1812 and by 1815 there were over 826 millions outstanding. After the resumption of peace the government decided, in 1817, to set to work to restore currency stability. It accordingly issued a loan payable in *assignats.* In other words, the government transformed a non-interest-bearing debt into an interest-bearing debt. By 1824 the outstanding paper was lessened by about one-third, and as a consequence, the depreciation which had been as much as eighty per cent was now reduced to about seventy-five per cent. In order to defray the interest on the new debt, however, the government was compelled to contract fresh foreign loans.

The Minister of Finance, Cancrin, seeing the danger in these successive foreign loans, now resolved to take some energetic steps. In 1827, the paper ruble was

made receivable for taxes at the rate of 3.6 for 1 silver ruble, thus involving a virtual repudiation of the public debt and causing widespread distress in all its customary forms, especially when in 1829 this principle was extended to private debts and the value of the silver ruble was definitely fixed at 3½ paper rubles. Finally, in 1834, it was decided to replace these ruble *assignats* by new government notes known as *rubles crédits,* based on the public domain and with a reserve fund in silver. During the next few years 596 millions of the old *assignats* were accordingly exchanged for 170 of the new *crédits.* By 1848 there were in circulation about 289 millions of these new government notes, guaranteed by over 100 millions of coin. The consequence was a diminution and final disappearance of the gold premium.

With the outbreak of the Crimean War, however, the government was compelled on the one hand to trench upon the metallic reserve, and on the other to increase the issue of notes. By 1858 the circulation of government notes amounted to 735 millions and the metallic reserve had fallen below 100 millions. The result could have been foreseen—a monetary crisis and the reappearance of a gold premium. The government now resolved to attempt to put an end to its troubles by the creation of a great state bank, with a monopoly of note issue and an ample reserve. The bank began operations in 1861, its capital being secured through a large foreign loan, as well as through the sale of state domains. As a result, the situation looked more favorable. But when the Polish Revolution broke out in 1863, it became necessary to suspend the further redemption of old rubles for the new bank notes. The value of the paper ruble consequently fell to 83½ kopeks, and it seemed to be impossible for Russia to extricate herself from this maze of uncertainty.

During the next decade the further issues of paper money fluctuated largely, depending upon the crops and the fiscal conditions. Although the paper issues had increased to 797 millions in 1875, the coin reserve had also grown to 231 millions, so that the paper ruble was still worth about 85 kopeks. Then, however, ensued the Turkish War, and by 1879, as appears from table 14 in the appendix, the issue of paper rubles had grown to 1,188 millions, and the paper ruble was now worth only 63 kopeks. The public debt had also been enormously increased and the budgetary balance seemed impossible of achievement.

It was not until about 1887 that the financial authorities endeavored to reëstablish currency stability on the basis of 1½ paper rubles for 1 silver ruble, that is, a repudiation of one-third of the value. But even then it took almost a decade to complete preparations; and it was not until the advent of Count Witte that the plans were perfected. In the meantime, the protectionist policy had put Russian industry partly on its feet, and a favorable balance of trade with a continual excess of exports enabled the Minister of Finance to amass a large metallic reserve. As a result of some rather adroit manoeuvering, designed to prevent speculation on the exchanges, Minister Witte was able to carry through his plans and in 1896 a ukase was issued, making all the old paper rubles convertible into coin after 1898 at the rate of 1½ for 1. Thereafter there were to be fresh issues only of bank notes, with a guarantee of gold. By the end of the century, the growing prosperity of the empire made it possible to reduce the outstanding paper to 630 millions, and to provide for a marked increase in the specie reserve.

The adoption of the monetary reform of the nineties introduced such stability into the whole situation that, when the Japanese War broke out in 1904, the government wisely decided, with a lively recollection of its

old troubles, to supply its needs through the contraction of foreign and domestic loans, rather than through the further issue of paper money. As a result, although the public debt of Russia continually increased, the improvement in the general economic situation and the stability of the foreign exchanges were such as to render possible the maintenance of a metallic standard. At the outbreak of the Great War in 1914, the public debt of Russia amounted to 3,800 millions of rubles, represented in no small part by productive assets like the railroads. The currency situation, moreover, gave the country no further concern.

VIII
Austria

Austria was the first of the European countries to issue paper money in the eighteenth century. In 1761, the Minister of Finance desired to afford the small investors an opportunity to participate in the public loans. He accordingly issued certificates of 25 and 100 florins (a florin being worth then about 50 cents) bearing six per cent interest. These Treasury certificates soon entered circulation as money. Additional issues were made in 1769 and 1771 and the interest-bearing certificates, having no legal-tender quality, circulated at par. In 1795, however, when the war with France broke out, the issues were largely increased. In 1796, when a slight depreciation made its appearance, the government thought that this might be prevented by declaring the notes legal tender. Naturally, however, the consequence was just the reverse. By 1800, with an outstanding circulation of about 200 millions, the depreciation now amounted to about fifteen per cent. From now on, the necessities of the war caused matters to go from bad to worse, until by 1811, as appears from table 15 in the appendix, the circulation amounted to 1,061 millions, and a silver florin was worth 8⅓ paper florins.

The outlook was now so dark that after the conclusion of peace in 1811 Emperor Francis I summoned a commission to devise methods of reform. A suggestion was adopted to replace the outstanding bills by new notes called redemption-certificates (*Einlösungsscheine*), on the basis of one new note for five old ones. This meant, of course, a virtual repudiation of eighty per cent of their value. But when the war broke out afresh in 1812, such large issues of these new notes had to be made that by 1816 they also had lost two-thirds of their value. After the final declaration

of peace in 1815, the conditions of the market were reflected in such an extreme depreciation that 100 florins of the old paper money, now known as WW (*Wiener Währung* or Vienna paper money), were declared equal to only 8 florins of the so-called MC (*monnaie conventionelle* or metallic money)—that is at a ratio of 1 to 12½.

After this virtual repudiation, with all the usual concomitants of distress and injustice, the national Austrian bank was founded in 1816 and the outstanding government paper was converted into bank notes, 250 of the WW being receivable for 100 of the MC. The process of conversion went on for a few years until the troubles in Naples arose. Then, unfortunately, the conversion operations had to be suspended and the government debt to the bank grew rapidly.

From 1830 to 1848 there was a period of comparative peace, so that by the latter date over 669 million florins of the WW had been retired, leaving less than 10 millions outstanding. The whole paper circulation was thus by this time composed almost entirely of bank notes, which stood at par. Now, however, came the revolution of 1848, with the affixing of legal-tender quality to the bank notes and with the issue of several kinds of new paper money, known as *Münzscheine* (metallic notes) and *Salinenscheine* (salt-mine notes), some with legal-tender and some without. During the next decade, the political situation was such as to prevent much improvement in the finances and the public debt, borrowed primarily from the bank, increased to over 315 millions in 1855. A monetary conference was now called in 1857 and a great project of reform was initiated. But the outbreak of the war with Italy in 1859 dashed all these hopes to the ground. The legal-tender clause was reëstablished, immense loans were contracted, and great issues of paper money followed.

The notes which had reached par in 1859 very shortly lost twenty-five per cent of their value.

New efforts that were later made to reëstablish stability were frustrated by the political situation. The war of 1866 again caused immense issues of paper, amounting to some 300 millions of ordinary legal-tender notes and 100 millions of notes secured by real-estate mortgages. The result, as appears from table 16 in the appendix, was a renewed depreciation of about fifty per cent. The public debt of the empire in 1866 amounted to 3,024 millions, over one-half being due to the wars, but a large part also being a consequence of the current deficits in the budget. From 1831 to 1847 the accumulated annual deficits amounted to 143 millions, and in the period 1848-1859 to 1,232 millions. In 1865 alone the deficit was almost 60 millions.

With the comparatively lenient treatment which Austria received at the hands of victorious Prussia in 1866 the situation began to improve. The fiscal affairs of Austria and Hungary were separated and Austria assumed seventy per cent of the debt, or 2,317 millions. The increasing economic prosperity now fortunately led to surpluses instead of deficits, and the progress was only temporarily arrested by the crisis of 1873. After 1878, however, both foreign and domestic politics proved to be troublesome and we again enter upon a period of deficits, lasting to 1888.

Now, finally, appeared a marked change for the better. From 1889 on, the prosperity of the country was unexampled. Continual surpluses were accumulated and a favorable balance of trade, with a great surplus of exports, enabled the government not only to refrain from any increase in the circulation of paper money, but also to prepare for a currency reform and the adoption of the gold standard, the free coinage of silver having already been suspended in 1879.

The currency reform was carried out by the law of 1892, the old florin being halved and the new standard being declared a gold crown (*Krone*). As the existing market ratio of silver to gold was 18.22 to 1, this was accepted as the basis of the conversion. The entire paper circulation outstanding at that time amounted to 379 million florins of ordinary government notes and 32 millions of *Salinenscheine*. Of the former, Austria assumed as its quota seventy per cent or 214 millions. At the accepted rate of conversion, this amounted to about 283½ millions of gold; and in order to provide a gold fund for the conversion of this paper, a loan of 150 millions was contracted. Hungary also borrowed 90 millions for its share.

The process of resumption was rudely interrupted by the crisis of 1893. This proved, however, to be only a temporary setback, and during the next few years the provisions of the law of 1892 were carried out and the paper money was gradually reduced. Paper currency was henceforth provided by a well-covered issue of the National bank of Austria-Hungary. By 1903 all but 3 millions of the government notes had been redeemed and there were left in addition only the well-secured *Salinenscheine*. Within a few years these also were all retired. Austria had thus finally extricated herself from her financial troubles. From that time until the outbreak of the Great War, Austria-Hungary remained on a stable gold basis and the debt, which amounted in 1914 to 18¾ billion *Kronen,* proved to be no insupportable burden.

IX

SPAIN

Spain has the distinction of being the first country to start a bank as well as to issue paper money. The bank began operations in Barcelona in 1401, while paper money was first issued in 1483 by the Duke Tendella at Alhama to pay the troops. The modern history of paper currency dates, however, from 1780, when Charles III issued paper notes under the name of *vales reales* in preparation for the war with England. In 1783, when the national bank was established, these *vales* became convertible bank notes, and enjoyed such confidence that they circulated for a time at a premium. Unfortunately, the necessities of the war with France caused Charles IV in 1793 to change these *vales* into irredeemable government paper, which he now issued in such quantities that they soon were received only at a discount. By 1799 over 2¼ million pesetas had been issued and in that year an attempt was made to bolster up their fading value by declaring them legal-tender. This device naturally proved to be unavailing and by 1808 the depreciation amounted to fifty-eight per cent, and by 1911 to ninety-six per cent.

Confronted by the prospect of almost total collapse in the value of the paper, the ministry now decided that something energetic must be done. After much discussion the government declared itself responsible for the payment of the notes as a part of the national debt, in the meantime making them receivable for taxation. The consequence was a considerable improvement, so that by 1813 the depreciation amounted only to fifty-six per cent.

Finally, after various changes in the legal-tender quality, the advent of peace made it possible to attempt a definitive solution. In 1817-18 the *vales* were declared convertible, to the extent of one-third, into con-

solidated six per cent certificates. Five *vales* in paper were made receivable for one in gold, and the same rule was applied to the amounts due for taxes. In other words, resumption of specie payments was effected by what amounted to a virtual repudiation of four-fifths of the outstanding paper debt. The consequent suffering was intense, and it took several years to establish a new equilibrium of economic life.

After the recovery, things went along smoothly for a time. The old national bank was liquidated in 1829 and was reconstituted as the Spanish bank of San Fernando, which received a monopoly privilege of note issue. In 1844, however, a few other banks were permitted to issue notes. The revolution of 1848 caused a suspension of specie payments and the bank notes were declared inconvertible. The government, however, now assumed responsibility for the note issues, declaring them receivable for taxes and making an endeavor gradually to contract the issues. The political troubles of the next few years prevented any very marked improvement in the situation. But the remainder of the old issue of government notes, which had circulated concurrently with the bank notes, were finally redeemed in 1851 on the basis of eighty per cent of their value, the *vales* being exchangeable for three per cent consolidated bonds.

From this time on, therefore, the paper currency consisted exclusively of bank notes. In 1856 a free-banking law was enacted and during the next decade large issues of bank notes of various degrees of excellence were made, so that by 1864 the twenty-one banks had 263 million pesetas of notes outstanding. The political troubles had in the meantime caused a great increase in the public debt and especially in the foreign debt; and in 1864 the crisis was such that the convertibility of the notes of the bank of Spain was suspended.

It was especially, however, in the next decade that

the situation became very much worse. In 1874, when the bank of Spain was again made a central bank, the outbreak of the Civil War led to a great increase in the maximum limit of note issues, which were now declared receivable in all payments to the state. By 1882 over 750 millions were outstanding. In the meantime a stupendous increase in the public debt had taken place, between 1868 and 1873. No less than 3,054 million pesetas were borrowed from abroad; and in 1877 the foreign debt amounted to 4,379 millions, almost all of it having been wasted in the ruinous civil war.

From that time until the end of the century, both the political and the economic situation was exceedingly unsatisfactory. Between 1850 and 1899 there were only three budgets without an annual deficit. The value of the peseta accordingly, as appears from table 17 in the appendix, continually fell. Above all, the Cuban troubles and the outbreak of the war with the United States in 1898 led to an immense increase in the note issues of the bank and to prodigious fluctuations of foreign exchange.

It was not until the beginning of the present century that an improvement was perceptible. The economic condition of the country now slowly bettered itself. The industries multiplied in the north and the regulation of the budget as well as the stabilization of foreign exchange was gradually achieved, so that the depreciation of the peseta slowly diminished. By the time of the outbreak of the war of 1914, when the Spanish debt amounted to almost 9½ billion pesetas, the situation had become fairly satisfactory; and the currency difficulties might well have been considered a thing of the past.

X

The South American States

The fiscal development of the South American states constitutes an interesting chapter in economic history. Confronted with the necessity of winning a continent and faced with the endeavor, for a long time unsuccessful, to secure political stability, the South American states form an instructive example of the dangers of undue resort to public credit and of currency inflation. We shall limit ourselves here to a survey of the three most important commonwealths.

A. The Argentine

Immediately upon the declaration of independence in 1820 the *junta* at Buenos Aires issued paper notes. In 1822 a bank of discount was founded, succeeded in 1826 by a national bank. The issues of bank notes, at first moderate, were soon greatly multiplied by the outbreak of the war with Brazil and in 1826, by which time 2,694,000 pesos had been issued, they were declared inconvertible, although now guaranteed by the government. Within a few years the continual increase of issues caused a depreciation. By 1828 an ounce of silver, whose normal value was 16 pesos, was now quoted at 116 paper pesos. But the flood of paper money went on unchecked. By 1835, over 15 million pesos were outstanding, and by 1840 a silver ounce was worth 514 paper pesos. Things now went from bad to worse. In 1854 there were outstanding 204 millions and by 1865, 298 millions. The fluctuations in the foreign exchange and in the depreciation of the paper became extreme.

In 1866-67, however, an effort at bettering the situation was made. The law of 1866 gave the provincial banks power to issue notes and provision was made for

the gradual redemption of the outstanding paper money. In 1867 there was instituted the exchange bureau (*officina di cambio*) which provided for a conversion of the paper pesos into coin at the rate of 25 for 1—a discount almost as great as that of the French *assignats* or the American bills of credit of the Revolution.

The next few years witnessed an improvement and the gradual accumulation of a gold reserve, which amounted, by 1873, to over 16 million pesos. But in 1874 the Civil War broke out afresh, soon followed by a political and economic crisis. The gold reserve of the exchange bureau was drawn upon, some of the banks failed, and the notes were finally declared inconvertible. Thus there was ushered in the second period of paper money which lasted from 1876 to 1883.

The situation was so bad in 1881 that an attempt to remedy the troubles became imperative. There were over 882 millions of notes outstanding and the troubles were further aggravated by the land boom and by the issue of paper money in each province. Various laws were now enacted, requiring the Bank of Buenos Aires to contract its note issue and to replace the old inconvertible legal-tender bank notes by new metallic or coin notes within two years at the rate of 25 for 1. The outlook now appeared more promising and the effort at reform was initiated with vigor. By 1884 the 882 millions of old notes had been replaced by 61¾ millions of new notes. Unfortunately the embarrassments connected with sudden deflation became so acute that by the end of the year a fresh panic occurred and in 1885 the process of conversion had to be suspended. The bank notes now again became inconvertible.

Thus the third period of paper money was introduced, and a succession of bad years followed. By 1889 the gold premium even amounted to one hundred per cent. In 1887 a free-banking law was enacted, based on the principle of guaranteed circulation, which promised

fairly well. In 1890, however, the revolution took place, followed by the crisis in the next year; and the premium on gold rose to 346. In 1890, indeed, a conversion office (*caja de conversion*) was opened but in its practical operation it turned out to be simply a machinery for emitting more paper money. By 1895 the paper in circulation amounted to over 296 millions, while the public debt had been continually increased to make good the annual budgetary deficits. In 1891 the debt amounted to 476 millions and as a consequence the premium on gold suffered the most erratic oscillations.

By the end of the century, however, the economic situation took a turn for the better, and the government prepared to put its house in order. Owing largely to the efforts of Señor Tornquist a remedy was now found in the new conversion law of 1899. The premium on gold at that time was 125, the paper peso being worth at the market rate forty-four cents in gold. It was accordingly provided that all the outstanding notes were to be converted into gold at the rate of forty-four centavos for 1 gold peso; or, in other words, at the ratio of 1 to 2.27. More exactly, gold was taken in the new law at a premium of 127.27 per cent, but, as it was popularly expressed, the price of gold was fixed at 227.27 per cent in paper. The conversion fund (*caja de conversion*) or gold redemption fund, which was later on fixed at 30 millions in gold, was to be alimented from the import duties, the bank profits, the sale of certain railways and various minor sources. The favorable conditions of foreign trade permitted the gradual execution of the law and thus was accomplished the conversion of all the paper at a premium.

The ensuing political stability and economic progress of the Argentine enabled the government to maintain the gold fund and to ensure the convertibility of the paper. Although there was imminent danger of a relapse in 1902-1903, the troubles were soon over-

come. As a consequence of a persistently favorable balance of trade, the Argentine remained in a relatively satisfactory situation up to the outbreak of the Great War. The public debt had indeed largely increased, amounting in 1914 to over 645 millions. But it is to be noted that while the debt was due largely to the early political troubles, it was ascribable in part at least to the construction of railways. The currency situation had, however, so improved that the old era of instability may be said to have been definitely surmounted.

B. Chile.

The currency troubles of Chile were chiefly of a later date. In 1860 a bank of issue was chartered, but failed to persuade the public to take its notes. Gradually, however, the issues were accepted. When the war with Spain occured in 1865, the government, which was largely dependent upon the Bank of Chile for support, permitted the bank to suspend specie payments. In 1866, moreover, the privilege of note issue was conferred on other banks as well. Although specie payments were resumed at the close of the war, this condition did not last long. The troubles broke out afresh with the crisis of 1878 and the bank notes were made not only inconvertible but also legal tender. At this time there were in existence eleven banks with over 15 millions of pesos outstanding. The outbreak in 1879 of the war with Peru and Bolivia, moreover, led the government to issue its own paper money (*billetes fiscales*). And no sooner had the country started to recover from these troubles than the Civil War occurred in 1891, with additional large issues of paper including the so-called *vales de tesoreria.*

The situation was now so bad that an earnest effort was made in 1892 to contract. From 1892, when the gold peso was adopted as the standard, to 1895 some

progress was made. The resumption act of 1895 provided for the redemption and incineration of the paper at the rate of 10 millions annually; and from 1895 to 1898 no further paper was issued. From that time on, the situation at least did not deteriorate; but on the other hand there was no distinct improvement, and it was found impossible either to liquidate the largely augmented public debt or to provide for a resumption of specie payments.

In 1898, however, the troubles with the Argentine broke out, followed by a run on the bank and the declaration of a moratorium. New government notes (*billetes fiscales*) were now issued to the extent of 50 millions. The general revenue conditions, however, owing to the acquisition of the guano territories, proved to be so satisfactory that no additional issues became necessary. In 1912, indeed, a conversion scheme was proposed with a gold fund (*caja de emission*) to ensure the conversion of outstanding notes at the rate of 12d. per peso (the gold peso being worth 18d.). The date fixed for the resumption of specie payments was soon, however, deferred to 1917 and the outbreak of the great war in 1914, with its consequent disarrangement, prevented the consummation of even this project. In the meantime the public debt of Chile had grown in 1914 to almost 156 millions pesos, internal debt, and to well-nigh £34 millions of foreign debt. Chile therefore had not been able to extricate herself from her currency troubles, and the fluctuation of foreign exchange continued almost unabated.

C. Brazil

The currency history of Brazil begins in 1808 when the bank of Brazil was created, providing the only currency in addition to the existing copper coins. Up to 1813 these bank notes remained convertible. But from 1814

on, over-issues led to depreciation. The note issues amounted by 1820 to over 8½ million milreis (*milreis* means a thousand reals). As a consequence, whereas the par of exchange on London had been 67½d. per milreis, the rate of exchange after the suspension of specie payments in 1821 fell to 47d. When independence was declared in 1822, the outbreak of the civil war seemed to render great additional issues imperative. By 1828 there were outstanding over 21¼ millions. Moreover, large foreign loans had been contracted from 1825 to 1828 at a ruinous rate, the five per cent loan having been issued at 52. In addition, the troubles with the copper coinage multiplied. As a result, the government in 1829 assumed responsibility for all the bank notes and in 1833 transformed them into government paper (*pagareis thesouron nacional*). This paper money, although receivable for taxes, was not invested with the legal-tender quality until 1835.

In 1833 a theoretical reform had been attempted, with a gold coinage based on a par of exchange equal to 43½d. The regional paper currency was to be withdrawn and new paper on a gold basis issued in exchange for the old notes as well as for the copper. But the project did not succeed. In 1838 a new bank at Rio de Janeiro was granted the privilege of issuing notes known as *vales,* bearing two per cent interest, and this was soon followed by other bank issues. As a consequence during this third period, up to 1853, the paper currency was composed of a multiplicity of bank-note issues together with the government paper money. In 1846 another attempt was made to relieve the situation, the law providing for the gradual redemption of the old paper at the rate of 27d. per milreis, *i. e.,* conversion at a discount. As a matter of fact, however, there was little if any contraction or conversion.

In 1853 a new period was ushered in by conferring on the Brazilian bank a monopoly of note issue. This

lasted until the crisis of 1857. At that time there were outstanding 43¾ millions of government notes and 51½ millions of bank notes, or a total of 95¼ millions. The crisis of 1857, with the attendant great fall in the exchange, led to the adoption of a free-banking law. As a result, we have the era of the so-called plurality of note issue, which lasted until 1866. The sad consequences, however, of this experiment led to the act of 1866 which prohibited the further issue of bank notes and provided for a gradual retirement of the outstanding issues. As a result, from now on until 1889 the currency was composed only of government paper money in various stages of depreciation. We thus have the new period of exclusive fiat money which lasted over three decades. In the interval the emancipation of the slaves became a burning issue and in 1871 the so-called emancipation fund, designed to render possible the abolition of slavery was created. By 1888 this reached the figure of 24 millions.

In this year 1888 a new currency system was inaugurated by a second free-banking law, which provided for a covering of the notes, either in coin or in commercial paper. The proclamation of the republic of 1889 led to some changes. The law of 1890 permitted a decided rise in the limit of note issues, of which immediate advantage was taken. As a consequence there ensued a depreciation so great that by the end of 1891 exchange on London stood at about 11½d. instead of the normal 67½d. The panic of 1892 led not only to the reintroduction of a monopoly of bank note issue, but also now again to large emissions of government or fiat money. This, together with the troubles of the Civil War, brought exchange on London down to 9¼d. By 1894 there were outstanding about 367 million milreis of government notes and 345 millions of bank notes, or a total of 712 millions. The situation had now become almost intolerable and, when

in 1896 the government decided to replace all outstanding bank notes by fresh issues of fiat money, a panic followed and exchange on London dropped to 7d.

From 1896 on, therefore, we have a currency issue composed exclusively of government paper. Since then, several efforts have unavailingly been made to ameliorate the situation. In 1899 provision was made for a fund designed to serve for the purposes both of guarantee and of redemption; but the crisis of 1900 rendered this effort abortive.

In Brazil, as in the other South American states, the political difficulties had made it impossible to balance the budget, and the deficits, together with the military expenses, had caused the accumulation of a large debt. Now, however, with the beginning of the new century, a gradual improvement in both the political and the economic situation ensued and the reëstablishment of the budgetary equilibrium enabled the government to turn its attention to an effort at contraction of the currency. By 1903 113 millions of paper had been retired and in 1906 an important project of reform was adopted. In that year, when there were still outstanding about 670 millions of paper and when the foreign debt stood at £70 millions and the internal debt at over 552 million milreis, a so-called conversion fund (*caisca de conversao*) was inaugurated. The rate of exchange was fixed at 15d. per milreis. The redemption fund which was alimented by the proceeds of the import duties was designed to redeem only notes issued by the *caisca* itself, differing in this respect from the analogous Argentine fund, which operates to redeem all outstanding paper currency, of whatever character.

The Brazilian redemption fund did not have quite such a successful career as that of Argentine. After 1908 excessive issues of paper were again made, followed by a depreciation in the foreign gold exchange. In 1910, as a consequence, the exchange rate of the

caisca was raised to 16d. per milreis, although the *caisca* was directed to accumulate a gold fund equal to the difference in the value of the notes resulting from the increase in this rate from 15 to 16d. By 1912 the convertible notes amounted to almost 333 millions, covered by a gold fund of 125½ millions; but the inconvertible outstanding paper still amounted to 607 millions. Moreover, the public debt had constantly increased so that it amounted in 1914 to 979 million milreis internal debt, and to £105½ millions foreign debt. The situation therefore at the outbreak of the European War, although far better than in the nineteenth century, was still not so satisfactory as in the Argentine.

D. Other South American States

Of the other South American states there is room to say only a word. Peru started on its career of mingled fiat money and inconvertible bank money (*vales* and *billetes*) in 1815. They soon lost almost their entire value. The experiment was repeated in 1822 and not infrequently in subsequent decades. In 1875 when 10 million *soles* (a *sol* equals 2s.) of bank notes were outstanding, specie payments were again suspended. Then came the war with Chile and the assumption of responsibility for the paper currency by the government, which now proceeded in addition to issue large sums of its own. In 1889 an effort was made to put an end to the old troubles by issuing new government notes (*bonos del gobierno*) at the rate of 15 of the old for 1 of the new.

Uruguay also has had a sad experience, the details of which it is unnecessary to give here. It may be remarked, however, that in 1875 the legal-tender notes were issued in such profusion that gold stood at a premium of 857 per cent.

The worst situation perhaps is found in Colombia where the War of Independence in 1811 led to the issue

of fiat money which soon lost all its value. After many mutations a national bank was created in 1880 with a monopoly of note issue; but a few years later the notes were all declared inconvertible. The Civil War in 1899 led to immense issues of paper, as well as to great foreign debts, so that in 1913 when the debt amounted to almost £4 million, foreign, and over 2¼ million gold pesos internal, the value of the paper had fallen to the extent of 99-100; that is, the paper peso or dollar was worth only one cent in gold.

XI
JAPAN

A history of currency inflation would not be complete without a short reference to Japan. Although paper money issues were known in Japan in the fourteenth century, as in China still earlier, it was not until the revolution of 1868 that the modern history begins. When the Emperor dismissed the Shogun and civil war ensued, the government was confronted by a war expenditure of 25 million yen and an ordinary revenue of 3.6 million. While loans and other extraordinary revenues brought the revenues up to somewhat over 9 millions, there still remained a deficit of over 15 millions. The suggestion was therefore made to issue paper money on the alleged security of land, the paper to circulate for thirteen years and then to be redeemed. On May 25, 1868, this plan was adopted and authority to issue 49 million yen was granted. No sooner, however, was the paper put in circulation, than it began to fall in value and the progressive depreciation was not checked by the familiar expedient of declaration of legal tender. Nor was the situation much improved in the next year when the legal period of redemption was reduced from thirteen to five years, in default of which the notes were to bear six per cent interest. In the meantime, the various warring clans had also issued large quantities of irredeemable paper known as clan notes, amounting by 1869 to almost 25 million yen. Moreover, in addition to the government legal tender proper, of which by 1869 there was now outstanding 50 millions of yen, various other kinds of paper were put in circulation, such as the civic department notes and convertible notes and certificates issued either by the treasury or by the colonial department.

The consequence was an unexampled rise of prices and a period of seeming prosperity upon which the

new government floated into power. But the ministry soon recognized the dangers involved and, after the successful outcome of the insurrection, proceeded to convert all the outstanding paper, including the clan notes, into so-called "new paper notes." A system of national banks, based on that of the United States, was inaugurated in 1873 and the banks were permitted to issue convertible notes on the deposit of government bonds, which were received in exchange for paper money.

In 1877, however, the Satsuma insurrection broke out and it became necessary to issue additional legal tenders. By the end of 1878 there were outstanding altogether 119.8 million yen of government notes. The natural consequence was a great depreciation, a marked rise of prices, a considerable excess of imports and a corresponding efflux of coin. Things now rapidly went from bad to worse. The premium on silver rose to twenty-five per cent in 1879, to fifty-four per cent in 1880, and to seventy-nine per cent in 1881. All the familiar earmarks of a period of inflation became visible. As we are told by the American consul, T. R. Jernigan: "In the year 1881 nearly everything in Japan had greatly risen in price, and as the great majority of the people considered only price, and not value, and ignored the wholly fictitious nature of the advance, it is not surprising that they imagined it both solid and likely to endure, and thought themselves very prosperous and quite justified in launching into much extravagant expenditure. Accordingly new farmhouses sprang up in every province, new clothes and ornaments were freely purchased, land property became in great demand and capital was inconsiderably borrowed at high rates of interest (and as inconsiderably lent by the national banks), and in general everybody rejoiced in hope, and a sense of prosperity."*

*_United States Consular Reports,_ no. 68, Sept., 1886, p. 653.

Japan was, however, now fortunate in having at the helm a great financier, Count Matsukata, who had a lively sense of the dangers. He decided upon a triple program: an immediate contraction of outstanding notes, the accumulation of a gold reserve, and the replacement of the old system of national banks, based on the American model, by a central bank, of the German type. This policy was at once inaugurated. The bank was started in 1882, the gold reserve was strengthened and the outstanding irredeemable notes were from 1886 on gradually exchanged for silver. The gold premium began to fall in 1884 and by 1886 it had completely disappeared, not, however, without the usual symptoms of distress. As Mr. Jernigan tells us: "Prices, of course, fell as precipitately as they had risen. With this fall in prices, distress and desolation extended over the land, and millions of people who had supposed themselves on the high road to wealth suddenly found poverty staring them in the face, while exacting creditors on all sides demanded the liquidation of debt. Depression and a sense of adversity naturally followed; bankruptcies became common and misery was everywhere present. . . For the present the people appear stranded upon a hard and dismal shore. . . But necessity is pressing many to exertion, and with an enforced return to frugality and diligence, production and trade will doubtless gradually revive and prosperity finally return."* Count Matsukata, however, persisted in his policy, and within a few years Mr. Jernigan's prophecies were fulfilled, normal conditions returned and Japan entered upon its modern era of progress. But the experiences of this unfortunate episode were not forgotten and Japan has since then been preserved from the evils of currency inflation.

**Op. cit.*, p. 654.

XII
The Great War

It is not the design of this paper to trace the currency history of the war further than to point out that the exigencies of the situation compelled virtually all the European belligerents to repeat the errors which were committed by Europe during the Napoleonic Wars, by the United States in the Civil War, and by the South American countries during their various periods of tribulation. Everywhere we find the amassing of gigantic debts and the issue of irredeemable or inconvertible paper money, which operated to accentuate still further the rise of prices and to add the woes of inflation to the other evils of war. The United States alone was saved from the perils of fiat money, not only by its late entrance into the contest, but also and more particularly by the fortunate opportunities of currency expansion afforded by the new and hitherto unutilized Federal Reserve system. Both the United States and Great Britain were also in the happy position of being able to rely somewhat more largely than the other belligerents on the revenues from taxation to defray a small part of the war costs. The result has been that while the United States entirely escaped the evils of inconvertible paper, Great Britain has suffered a somewhat less degree of depreciation than has fallen to the lot of the other countries. A summary view of the pre-war and post-war public debts of currency inflation and of the consequent rise of prices in the principal countries is contained in the three tables annexed:

I. Public Debts

*In million dollars

	Pre-War 1914	Post-War 1919	Most recent date	
United States........	1,190	25,322	June 30, 1921	23,977
Great Britain........	3,165	37,221	June 4, 1921	37,520
France..............	6,291	32,322	March 1, 1921	48,205
Italy................	2,621	15,009	October 31, 1920	18,928
Russia..............	4,623	†25,383		
Belgium.............	722	1,888	April 1, 1921	4,706
Germany............	1,126	48,552	October 10, 1921	71,007
Japan	1,292	1,289	March 31, 1920	1,397
Argentine...........	645	823	April 30, 1921	968
Brazil...............	1,025	1,190	June 1, 1921	1,580
Chile...............	198	......	June 1, 1921	219

*Foreign currencies converted into dollars at pre-war normal rates. This involves exaggerated figures for some of the foreign countries.

†As of 1917.

II. Paper Currencies*

(In Millions)

	1913	1920	1921
UNITED STATES............	$1,060	Oct. 1 $4,899	Oct. 1 $4,035
United States Notes			
Federal Reserve Notes			
Federal Reserve Banknotes			
National Bank Notes			
GREAT BRITAIN............	£29	Aug. 11 £464	Aug. 20 £426
Bank Notes			
Currency Notes			
FRANCE....................	fr. 5,565	Aug. 30 fr.38,066	Aug. 30 fr. 36,783
Bank Notes			
GERMANY..................	mk. 1,990	Aug. 30 mk. 77,087	Oct. 31 mk. 92,347
Banknotes			
Reichskassenscheine			
Darlehnskassenscheine			
ITALY......................	li. 499	Sept. 30	
Banknotes		1919 li. 16,356	May 31 li. 11,768
Government notes			
JAPAN.....................	yen 426	March yen. 1,368	May 31 yen. 1,053
Banknotes			

*Derived from tables furnished by the League of Nations, United States Treasury Reports, and *The Financial and Economic Annual of Japan*.

*III. Index Numbers of Wholesale Prices**
1913 as 100

	1914	1915	1916	1917	1918	1919	1920	1921 Aug.
United States..........	100	101	124	176	196	212	†250	152
Great Britain..........	101	126	159	206	226	242	†298	183
Canada................	101	110	135	177	206	217	246	174
Australia..............	100	141	132	155	170	180	†236	§159
France................	101	137	187	262	339	357	‡526	331
Italy..................	95	133	202	299	409	364	‡655	542
Germany..............	100	...	...	...	...	...	‡1,560	1,777
Sweden................	115	159	233	341	345	322	‡425	§300
Japan.................	95	97	117	147	192	236	259	199

*From *Federal Reserve Bulletin*, October, 1921, p. 1225.
†August.
‡September.
§July.

XIII
Conclusion

From the above survey certain conclusions are reasonably clear.

In the first place most of the existing public debts are due, as they always have been due, primarily to war. Moreover, the sudden outbreak of war has almost inevitably brought about recourse to paper money, in the shape either of irredeemable government bills or of inconvertible bank notes. The temptation to overissue these notes has generally been found to be irresistible and has consequently led to inflation with its attendant evils. Furthermore, public debts have been increased by the accumulated budgetary deficits which have in themselves often led to paper money and inflation.

The inference from these considerations is that fiscal progress now everywhere imperiously demands a reëstablishment of the budgetary equilibrium. Unless every country is willing or able to provide a revenue from taxation which will suffice not only for its ordinary expenditure but also for the interest and amortization of its public debt, we must expect to see a further increase of the public debt, a renewed emission of irredeemable or inconvertible paper, and a consequent perpetually growing inflation.

In the second place, our survey brings out plainly that the issue of inconvertible or irredeemable paper money always ends in depreciation. It is true, as was pointed out in the introduction, that a distinction must be drawn between a general rise of prices and that particular rise of prices implicit in the term depreciation. But it is none the less true, as our historical sketch has shown, that the latter helps to influence the former, and that the depreciation caused by the undue resort to paper money is no inconsiderable explanation of the exaggerated rise of prices that we call inflation. More-

over, it must be remembered that under modern conditions of international trade, inflation registers itself primarily in the rate of foreign exchange and that these fluctuations of foreign exchange cause perturbations and embarrassments from which the whole economic life of the country severely suffers.

In the third place, we have learned from our history that the worst evils of inflation are often of a subtle character. During the period of rapidly rising prices we have all the appearances of a phenomenal prosperity. Not only, however, is this prosperity illusory, but it creates it own nemesis in the inevitable reaction that is sure to ensue.

The prosperity, we have said, is illusory. With the rapid rise of prices, those who have no commodities to dispose of suffer severely. The creditor is in an unhappy position and the recipients of fixed incomes are compelled to resort to all manner of unworthy expedients in order to make both ends meet. The continual fluctuations of price introduce an uncertainty in business which is only temporarily masked by the advance. The opportunities of a sellers' market irresistibly lead to profiteering and its attendant evils. The sudden increase of the paper income produces private extravagance and public prodigality. The extravagant rise of wages, even though it lags behind the general rise of prices, coupled with the unceasing demand for labor, engenders a demoralization, which soon returns to plague the industry. The habits of thrift, painfully built up during a lifetime, are abruptly discarded. The kaleidoscopic mutations of paper fortunes, amassed almost over night, beget a spirit of speculation and of peculation. The feverish activity of the market destroys the habits of orderliness and sobriety, and the brilliant prospects of suddenly acquired wealth create in the public a delirium of improvidence and the sense of living in a veritable golden age.

The day of reckoning, however, soon follows. When the wave rises to a crest, it breaks with an overwhelming force; when the fever subsides, the resulting weakness is intense. As the paper finally loses its value, fortunes are now suddenly wiped out, and many of the supposedly wealthy find themselves beggared. With the collapse of demand, unsalable stocks deplete the business inventory and failures are the order of the day. Those who have habituated themselves to an extravagant mode of life are faced with the grim necessity of immediate retrenchment. The laborer resists to the uttermost any lowering of his wages, however necessary it may be to the reëstablishment of the new equilibrium. The government finds itself embarrassed by the drying up of the sources of its revenue. The prudent and the patriotic, who have undergone sacrifices in order to invest in government paper, suffer for their patriotism. The splendors of the former prospects are now seen to have been only a mirage. The golden age of inflation turns out to have been after all nothing but a gilt-paper age.

Where the abuses have not been so excessive, the consequences are not so painful. But the tendency is everywhere the same, and the evils are always present in some degree.

The fourth conclusion from our survey refers to the disappearance of, or escape from, inflation. This, as we have seen, can be accomplished only in two ways: through a reduction of the debt or through the contraction of the paper issues which we have become accustomed to call deflation. The only possible methods to reduce a debt are to pay it or to repudiate it. Not a few countries, as we know, have resorted to what is virtual repudiation by converting a part of the existing paper currency at a discount. When the United States finally exchanged the remnants of its continental revolutionary bills of credit at 100 for 1; when France took up

the *assignats* at 30 for 1; when Russia and Austria, Spain and the South American states converted a part of their outstanding paper at a fraction of its original value: these were all examples of virtual repudiation. On the other hand, with the notable exception of the United States which was in an especially fortunate situation after the Civil War, no country during the nineteenth century has made a successful endeavor to sink its public debt.

At the present time, only a few of the recent belligerents are dealing seriously with their public debt. Italy and Germany, as well as Austria and Czecho-Slovakia, have adopted the project of a capital levy, designed to wipe out a substantial part of the public debt by the collection of a large revenue from property. Even here, however, the efficacy of the plan has been much impaired by the provisions for spreading the burden over a long term of years, thus converting the capital levy into what is virtually an additional income tax. Unless all signs fail, there is little prospect of these gigantic debts being paid. As with the nineteenth century war debts, they are likely to remain a perpetual burden on the community, the weight of which will be lightened only by the gradual increase of wealth and prosperity. Unless, however, the greatest care is taken, there is serious danger lest the actually existing debts be further increased in time of peace, with the probable result of total or partial repudiation.

The second method that has been employed is to overcome the evils of inflation by contraction, deflation, or conversion. The experiments that have been made with contraction in the nineteenth century, however, are not such as to inspire us with great confidence. For, as we have seen, contraction or deflation, carried beyond a certain reasonable point, almost always spells commercial embarrassment and business disaster. The early effort at contraction in the United States after

the Civil War was, as a consequence, soon checked. The most that can be hoped for at present is a cessation of further inflation and a prudent conduct during the years of gradual recuperation until a measure of reëstablished confidence and prosperity may render possible a conversion of the existing paper money and a reintroduction of specie payments. This conversion, as we have seen, sometimes takes place at par, after a period of probation, as in England in 1821, in the United States in 1879, or in Japan in 1886. In other countries, as we have learned, the conversion has taken place at a discount which, as we have just pointed out, involves a virtual repudiation. Again, conversion has sometimes been made possible through the adoption of an entirely new unit, as in Austria in 1892. Finally, conversion has occasionally been aided by an institution for special conversion or by a redemption fund, as in the Argentine and in Brazil.

Above all, however, the success of the conversion and the possibility of maintaining it in unimpaired activity has been due in almost every case to an improvement in the general political and economic conditions. Just as the public debts, when paid at all, have been reduced by an excess of revenues, so inflation to the extent that it is connected with the depreciation of the rate of foreign exchange has been lessened by a more favorable relation between exports and imports. It is undoubtedly true that there is a fallacy underlying the often accepted doctrine of a favorable balance of trade. The old Mercantilist theory that an excess of exports is necessarily a benefit and an excess of imports a detriment is no longer accepted by any careful thinker. For an excess of imports may be an indication of prosperity, not of adversity.

In the first place, imports may represent the profits of the commercial transactions, the profits being received in the shape of goods rather than of coin or

credits. While the other party to the transaction will presumably also make profits, a surplus of profits accruing to any one party to the exchange will frequently register itself in an excess of imports. In the second place, the imports may represent the so-called invisible balance, such as insurance premiums, banking commissions, travelers' outlays, sums belonging to immigrants and, above all, interest on foreign investments. Before the war, for instance, Great Britain had a normal excess of imports amounting to several hundreds of millions annually. On the other hand, some of the poorest countries had an excess of exports, the exports representing in large part the interest on the indebtedness to foreign nations, and thus betokening economic weakness rather than economic strength. Students of the problem have accordingly long been familiar with the distinction between the balance of trade and the so-called equilibrium of commerce, the latter meaning such a relation between imports and exports as to enable the national debits and credits to balance each other. In one country the commercial equilibrium may mean an excess of exports, in another country an excess of imports, and not only a temporary but a permanent excess.

While this is undeniably true, it is none the less true, however, that an excess of exports beyond this equilibrium point may denote a prosperous condition, and that an excess of imports beyond the same equilibrium point may imply an unprosperous condition. Such an excess of imports may mean the incurring of a foreign debt or the necessity of parting with either securities or gold. An excess of exports beyond that point, on the other hand, may render possible the accumulation of foreign credits, the repayment of foreign indebtedness, the repurchase of home securities held abroad or the amassing of a gold reserve—all of which may be welcome signs. Making due allowance for this distinction between the balance of trade and the equilibrium of

commerce, it is therefore a fact that an excess of exports may mean increasing strength and an excess of imports growing weakness. In the last instance, therefore, the disappearance of inflation depends not so much upon actual deflation as upon the relative deflation which is so closely connected with the growth of general prosperity and which is reflected in the relation between exports and imports and the rate of foreign exchange.

The final conclusion from our study is that just because of the interdependence of all great commercial countries in modern times, debt payment and currency reform have become international problems. It is not by impoverishing Germany, or preventing Poland from buying raw materials at what is to them grossly inflated prices, that any recovery is to be expected. No one can improve his own condition by impoverishing his customers. Nor can countries like Great Britain and the United States expect to benefit by an insistence on the immediate payment of the debts due to them by the Allies. Whatever arguments for the retention of these obligations may be advanced from the point of view either of possible political pressure or of a guarantee against some conjectural economic necessity of the future, it is obvious that such gigantic debts can be paid at present only through the medium of exports of goods from the debtor nations, a process which is bound to react disastrously upon the creditor nations by curtailing their exports. What has already happened to Great Britain in the shipping and coal industries is symptomatic of the perils attendant upon our pressing for immediate or speedy payment of the Allied debts.

Two things only will make it possible for the world to get on its feet again. One is for each country which has fallen into the quagmire of fiat money to set its face resolutely against further temptations, to reduce as far as possible its military and naval expenditures and

to put its fiscal house in order by a prompt and vigorous application of taxation with a view of reëstablishing budgetary equilibrium. But a taxation as excessive as that encountered today even in the United States, not to speak of the rest of the world, cannot be continued without hazard. No country can long endure the application of so large a part of the social income for purely unproductive consumption without suffering a marked retardation in the tempo of its economic progress. For it is only out of the setting aside of an appreciable surplus of annual production that a nation's capital can be replenished and the economic resources strengthened. Where this surplus is destroyed, or even nibbled into, by the conversion of the productive consumption of a normal economic life into the unproductive consumption of government outlay for military or naval purposes, the results are sooner or later bound to be disastrous. In the long run, political security cannot be purchased at the cost of economic debility. The beginning of wisdom is thus obviously some method of limiting armaments, a result that can clearly be achieved only by international agreement. In such an agreement even a country like the United States must be prepared for a policy of give and take and, if necessary, must be willing to recede from its old-time political policy of aloofness and isolation.

But, in the second place, the necessary budgetary equilibrium will be made possible only and concurrently with a stabilization of the exchanges. This is also from the very nature of the case an international problem which must be met by international methods that it is not our function here to discuss.

It is clear then that in the solution of the world's present economic and fiscal problems the United States must also play its part. The solution can be achieved only by a realization of the fact that as this gigantic conflict was universal in its scope and in its effects, so the

remedy must be equally universal in character. Whether we desire it or not, we have all become integral parts of a stupendous world mechanism, no portion of which can cease to function without inevitably affecting the activity of the rest. The slogan of economic and fiscal reform must be: "Set your own house in order, but join with your neighbors in setting the world house in order." To this imperious demand practical policies must be adjusted; for the sake of this economic necessity old shibboleths must be discarded and outworn political programmes relegated to the dust heap. Not aloofness, but constructive coöperation in both politics and economics must henceforth become the watchword of the United States.

APPENDIX

TABLE 1

CONTINENTAL BILLS OF CREDIT. ISSUES*

In Millions of Dollars

1775	June 22	2	
	July 25	1	
	November 29	3	$6,000,000
1776	February 17	4	
	May 9	5	
	July 22	5	
	November 2	5	19,000,000
1777	February 26	5	
	May 20	5	
	August 15	1	
	November 7	1	
	December 3	1	13,000,000
1778	January 8	1	
	January 22	2	
	February 16	2	
	March 5	2	
	April 4	1	
	April 11	5	
	April 18	½	
	May 22	5	
	June 20	5	
	July 30	5	
	September 5	5	
	September 26	10	
	November 4	10	
	December 4	10	63,500,000
1779	February 3	5	
	February 19	5	
	April 1	10	
	May 7	50	
	June 4	10	
	July 17	15	
	September 17	15	
	October 14	5	
	November 17	10	
	November 29	15	140,052,380
		Total	241,552,380

*Report of Registrar, James Nourse, to House of Representatives, January 30, 1828.

TABLE 2

Continental Bills of Credit

Scale of Depreciation, as fixed in the Massachusetts Act of September 29th, 1780.*

$100 in coin rated as equal in Bills of Credit to

1777	January	$ 105	1779	October	2,030
	July	125		December	2,593
1778	January	325	1780	January	2,934
	July	425		February	3,322
1779	January	742		March	3,736
	July	1,477		April	4,000

After April 1, 1780, 1 Spanish mill'd dollar was equal to 40 of the old emission.

By the Massachusetts Act of November 1, 1781, one dollar was to be equal in dollars of the new emission to

1781	Feb. 27	$1¾	June 15	3
	May 1	1⅞	Oct. 1	4
	May 25	2¼		

*From an old Broadside in the possession of the author.

TABLE 3

Issues of Revolutionary Paper Money by the States

	1775	1776	1777	1778	1779	1780	1781	1783	Total
MASS.									$3 868 000
R. I.	$200 000	$300 600	$15 000		$133 000	$66 000			714 600
CONN.	500 000	366 300	17 500			632 700			1 516 500
N. Y.	112 500	637 500					$411 250		1 161 250
N. J.		133 000				600 000	800 000	$85 000	1 618 000
PA.	420 000	227 000	532 000			1 516 000	1 330 000	300 000	4 325 000
DEL.	80 000		66 500						146 500
MD.	535 000	415 000							950 000
VA.	875 000	1 500 000	2 700 000	$2 700 000	2 500 000	30 666 000	87 500 000		128 441 000
N. C.				1 250 000	2 125 000	3 600 000	26 250 000	100 000	33 325 000
S. C.									33 458 926
									209 524 776
					Congress				241 552 380
					Total authorized issues				451 077 156

TABLE 4

FRANCE

Issues of banknotes under Law. *

(In Millions of Livres)

1718			148.6
1719	January 5	18	
	February 7	20	
	April 1	20.9	
	April 22	51	
	June 10	50	
	July 20	220.7	
	September 22	120	
	October 24	120	
	December 29	359.7	980.5
1720	February 6	200	
	March 26	300	
	April 5	396	
	April 19	436.6	
	May 1	362.4	
	June 26	99.9	
	September 2	37	
	September 19	50	
	September 23	59.9	2,940.7
			3,070.8

*From A. Courtois, *Histoire des banques en France,* p. 302. 2d ed., Paris, 1881.

TABLE 5

THE ASSIGNATS IN FRANCE*

(Circulation in Million Livres)

1791	June 1	912	1795	Jan. 1	7,229
	Oct. 1	1,151		Apr. 1	8,327
1792	Sept. 22	1,972		July 1	12,338
1793	Jan. 1	2,826		Oct. 1	17,879
	Aug. 1	3,776	1796	Jan. 1	27,565
1794	May 1	5,891		Apr. 1	36,672
	July 1	6,082		July 1	34,509
	Oct. 1	6,618		Sept. 7	45,579

TABLE 6

THE ASSIGNATS IN FRANCE

Depreciation †

A Louis d'or of 24 livres was worth in assignats.

1789	Aug. 31	24.4	1795	Feb. 24	137
	Dec. 29	25.1		Mar. 26	200
1790	May 25	25.5		Apr. 23	242
	Dec. 25	26.1		May 15	360
1791	Jan. 29	26.2		June 10	690
	June 28	28		July 16	750
	Dec. 27	35.3		Aug. 15	868
1792	Jan. 31	38		Sept. 15	1,145
	June 29	40		Oct. 15	1,560
	Nov. 30	34.8		Nov. 15	3,096
1793	Jan. 29	43.8		Dec. 15	4,100
	June 28	72	1796	Jan. 15	5,068
	Oct. 8	81		Feb. 15	6,610
1794	Jan. 12	59.3		Mar. 15	7,100
	June 9	80		Apr. 15	5,950
	Nov. 28	98		May 15	8,300
	Dec. 30	120		May 25	12,000
				June 3	14,775
				June 5	17,950

*From A. Courtois, *Histoire des banques en France*, 2d ed., 1881, p. 329.

†From A. Bailleul, *Tableau complet de la valeur des assignats, des rescriptions et des mandats jour par jour depuis leur émission*, 11th ed., Paris, an V (1797).

TABLE 7

GREAT BRITAIN

The Bank Restriction

	Bank of England Notes in Circulation (in Million Pounds)*	Price of Gold per oz. †	Index No. of Prices‡	Public Debt in Million Pounds§
1792	11.3	£3-17s-6d	93	239.6
1793	11.9	3-17-6	99	247.9
1794	10.7	3-17-6	98	263.3
1795	14.0	3-17-6	117	321.5
1796	10.7	3-17-6	125	363.9
1797	9.7	3-17-6	110	388.9
1798	13.1	3-17-10½	118	427.5
1799	13.0	3-17-9	130	444.3
1800	16.8	4-5-0	141	470.9
1801	16.2	4-4-0	153	517.5
1802	15.2	4-3-6	119	537.7
1803	15.3		128	547.7
1804	17.1	4-0-0	122	571.1
1805	17.9	4-0-0	136	599.9
1806	17.7		133	621.1
1807	17.0		132	633.8
1808	18.2		149	643.5
1809	18.5	4-10-0	161	654.5
1810	21.0	4-13-6	164	662.2
1811	23.4	4-14-0	147	678.2
1812	23.4	4-15-0	148	706.3
1813	23.2		149	708.1
1814	24.8	5-8-0	153	813.1
1815	27.3	4-9-0	132	861.0
1816	27.0	4-2-0	109	845.9
1817	27.4	4-0-0	120	839.4
1818	27.8	4-1-0	135	840.6
1819	25.1	3-18-0	117	836.5
1820	25.3	3-17-10½	106	834.9
1821	23.9	3-17-6	94	827.9

*As of February in each year. From the *Bank-Charter Committee Report*, 1831-1832, appendix No. 5.

†From Tooke and Newmarch, *History of Prices*.

‡From W. S. Jevons, *Investigations in Currency and Finance*, 1884, p. 144. Prices of 1782 as 100.

§From *Report on Public Income and Expenditure from 1688-1801*, 1869. Vol. II, appendix No. 12, National Debt., p. 298.

TABLE 8

Great Britain

Public Debt*

showing influence of wars.

(In Millions of Pounds)

War	1691	3.1	War	1793	247.9
"	1697	14.5	"	1815	861.1
Peace	1698	15.4	Peace	1816	845.9
"	1700	12.6	"	1830	784.8
War	1702	12.8	"	1840	788.6
"	1712	34.9	"	1850	787.1
Peace	1713	34.7	"	1854	769.0
"	1717	40.3	War	1855	775.2
War	1718	40.4	"	1856	803.9
"	1721	54.4	Peace	1857	808.1
Peace	1722	54.2	"	1869	749.3
"	1739	46.6	"	1878	767.9
War	1740	47.1	War	1879	770.1
"	1748	75.8	"	1880	771.0
Peace	1749	77.5	Peace	1881	769.9
"	1755	72.5	"	1900	628.0
War	1756	74.6	War	1901	628.9
"	1763	132.7	"	1903	745.0
Peace	1764	133.3	Peace	1904	770.8
"	1774	127.2	"	1914	661.3
War	1775	126.9	War	1916	1,108.9
"	1783	231.8	"	1919	5,871.9
Peace	1784	243.0	Peace	1920	7,434.9
"	1792	239.7	"	1921	7,831.8

*Figures to 1869 from *Report on Public Income and Expenditure from 1688-1801,* 1869, vol. ii.

Figures from 1875 from *Return on the National Debt,* cd. 240, 1921.

TABLE 9

FRANCE
Public Debt *

(In Million Francs)

	Annuities (Rentes Perpetuelles)	Capital	Total Debt
1801	35.7		
1810	56.7		
1820	172.8		
1830	204.7		
1840	195.9		
1850	229.6		
1860	338.3		
1870	358.1		
1875	748.4		
1879	746.8		
1890	730.4		
1900	693.9	22,001.9	30,055.4
1910	657.7	21,922.2	32,864.2
1914 July 1	657.7	21,922.2	32,579.3
1917 Dec. 1			124,338.4
1919 Jan. 1			147,472.4
1920 Sept. 30			285,750.3
	Interest		
1921 March 31	9,795.7		302,303.6

*Arranged from the *Bulletin de Statistique et de Legislation comparée* and especially from *La France financière et économique*, 1919.

TABLE 10

UNITED STATES

Depreciation of Greenbacks *

	Average Price of Gold in Greenbacks		Average Price of Greenbacks in Gold
1862	113.3		88.3
1863	145.2		68.9
1864	203.3		49.2
1864	Maximum 285.0	Minimum	30.92
1864	157.3 ?		63.6
1866	140.9		71
1867	138.2		72.4
1868	139.7		71.6
1869	133.		75.2
1870	114.9		87
1871	111.7		89.5
1872	112.4		89.0
1873	113.8		87.9
1874	111.2		89.9
1875	114.9		87
1876	111.5		89.8
1877	104.8		95.4
1878	100.8		99.2
1879	100		100

*From W. C. Mitchell, *Gold Prices and Wages under the Greenback Standard,* 1908, p. 4.

TABLE 11

United States

Price Changes under the Greenback Standard *

	Wholesale Prices	Retail Prices
1860	100	100
1861	107	94
1862	131	109
1863	168	148
1864	215	225
1865	219	224
1866	208	203
1867	193	177
1868	190	180
1869	177	172
1870	166	156
1871	155	144
1872	151	138
1873	148	143
1874	145	144
1875	140	134
1876	135	120
1877	134	117
1878	127	99
1879	123	93
1880	127	107

*From W. C. Mitchell, *Gold Prices and Wages under the Greenback Standard,* 1908, p. 76.

TABLE 12

ITALY

Public Debt and Gold Premium *

(In Millions of Lire)

	Public Debt: Interest (Rendite)	Public Debt: Capital		Gold Premium on the Paper Currency
1861	148	3,092	1866	7.81
1862	149	3,109	1867	7.37
1863	186	3,832	1868	9.82
1864	225	4,613	1869	3.94
1865	262	5,347	1870	4.50
1870	394	7,999	1871	5.35
1875	438	8,829	1872	8.66
1880	479	10,114	1873	14.21
1885	520	11,143	1874	12.25
1890	561	11,800	1875	8.27
1895	609	12,257	1876	8.47
1900	579	12,645	1877	9.63
1905	566	12,705	1878	9.42
			1879	11.19
1915 May		13,636	1880	9.49
1919 May 31		77,763	1881	1.88
1920 Oct. 31		98,072	1882	2.65

*From J. Tivaroni, *Storia del debito pubblico del regno d'Italia,* vol. ii, appendix.

TABLE 13

RUSSIA

Paper Money, 1788-1817 *

	Assignats in Circulation (In Millions of Rubles)	Value of Silver Ruble in Paper
1788	40	1.03
1790	100	1.15
1791	111	1.23
1792	117	1.26
1793	120	1.35
1794	124	1.41
1795	124.5	1.46
1796	150	1.47
1804	261	
1805	292	
1806	319	
1807	382	
1808	477	
1809	533	
1810	579	4.00
1811	581	
1812	646	
1813	749	
1814	798	
1815	826	
1816	831	
1817	836	

*From P. Cahen, *L'abolition du cours forcé en Russie,* 1905, p. 523.

TABLE 14

Russia

Paper Money and Public Debt, 1844-1897 *

	Circulation in Million Rubles	Value of Paper Ruble in Coin Kopeks	Public Debt in Million Rubles
1844	30.7	98.5	
1845	121.8	98.1	
1848	289.6	95	
1850	300.3	98.7	
1855	356.3	93.0	134.8
1858	735.3	93.1	134.3
1860	678.2	92.5	219
1865	679.6	81.5	378.6
1870	721.8	76.8	592.9
1875	797.3	84.8	970.0
1877	790.1	67.2	1,051.0
1878	1,039.9	64.6	1,045.0
1879	1,188.1	63.1	1,040.0
1880	1,162.5	64.4	1,190.0
1890	1,046.2	72.6	1,490.6
1897	1,121.4	66.66	2,128.8

*From E. Lorini, *La réforme monétaire de la Russie,* 1898, appendix.

TABLE 15

AUSTRIA

Paper Money, 1796-1817 *

	Circulation in Million Florins	Value in Paper of 100 Florins Silver
1796	46.8	100.25
1797	74.2	102
1798	91.9	101
1799	141	107
1800	200.9	115
1801	262	116
1802	337.2	120
1803	339.2	133
1804	337.6	135
1805	337.31	146
1806	449.8	175
1807	487.6	202
1808	524.2	222
1809	650.9	315
1810	995	552
1811	1,061	833
1812	212.1	137
1813	295.6	183
1814	457.6	228
1815	610.1	351
1816	638.7	328
1817	428.7	333

*From A. de Mülinen, *Les finances de l'Autriche,* 1875, p. 124.

TABLE 16

AUSTRIA
Gold Premium, 1848-1892 ‡

1848	17*	1872	9.8†
1849	27	1873	10.1
1850	50	1874	9.9
1851	34		
1852	25	1875	10.5
1853	16.75	1876	19.6
1854	46.50	1877	21.2
		1878	16.8
1855	29.25	1879	14.8
1856	13.50		
1857	9.33		
1858	6.75	1880	15.9
1859	53.20	1881	15.3
		1882	17.3
1860	44.33	1883	17.5
1861	50.03	1884	19.4
1862	38.67		
1863	18.34	1885	22
1864	19.32	1886	22.3
		1887	23.7
1865	14.28	1888	23.3
1866	29.75	1889	17.1
1867	30.		
1868	18.75		
1869	22.38	1890	14.
1870	25.40	1891	14.4
1871	20.02	1892	00.00

*Figures from 1848-1871 represent the maximum premium.

†Figures from 1872-1891 represent the average premium.

‡From P. Cahen, *L'abolition du cours forcé en Russie et en Autriche*, 1905, pp. 570, 571, 577.

TABLE 17

SPAIN

Depreciation of Paper Currency, 1883-1910 *

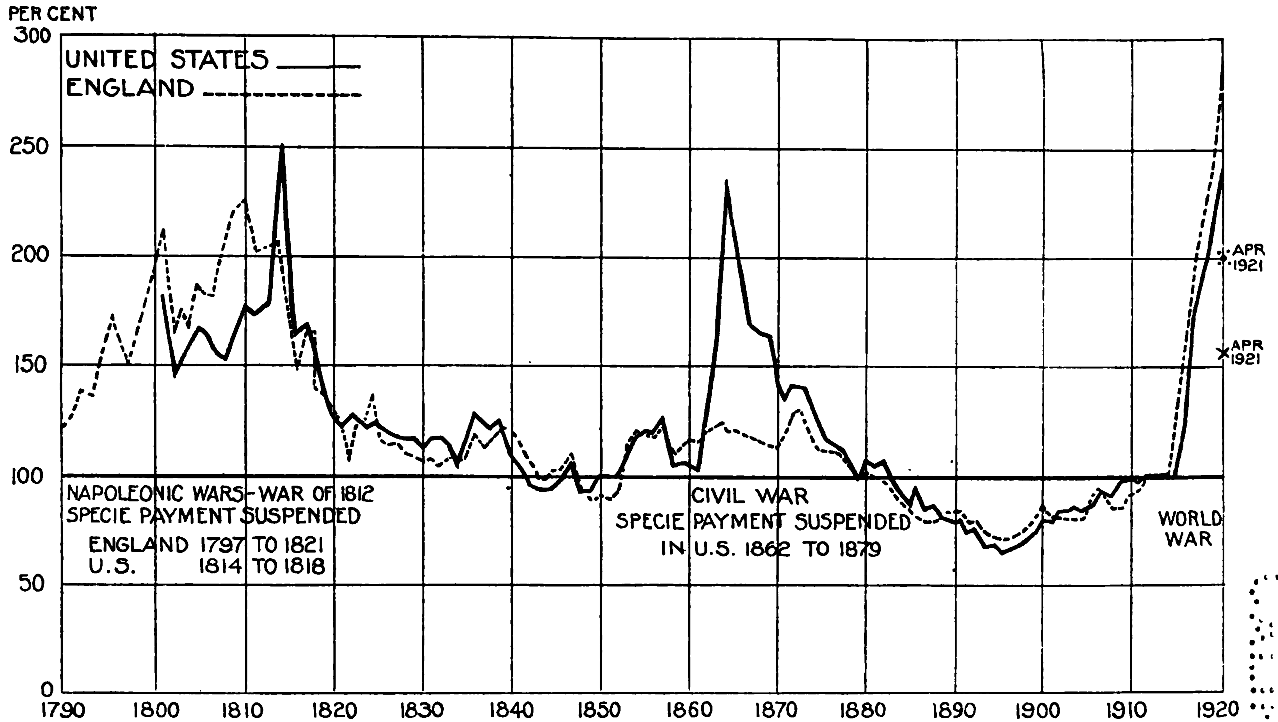
(In Million Pesetas)

	Bank Note Issues in Million Pesetas	Value of 100 fr. Specie in Paper Pesetas
1883	270	102
1884	383	101
1885	469	102
1886	526	102
1887	612	101
1888	120	102
1889	735	103
1890	734	104
1891	812	107
1892	884	115
1893	928	119
1894	910	120
1895	994	115
1896	1,031	121
1897	1,206	130
1898	1,444	154
1899	1,518	125
1900	1,592	130
1901	1,639	138
1902	1,623	136
1903	1,608	135
1904	1,597	138
1905	1,550	131
1906	1,524	113
1907	1,556	112
1908	1,642	113
1909	1,670	110
1910	1,715	107

*From F. Rühe, *Des Geldwesen Spaniens,* 1912, p. 291. *Cf.* Gil y Pablos, *Estudios sobre la moneda y los cambios,* 1906, appendix, pp. 366-367.

TABLE 18

Price Fluctuations of a Century*



Wholesale Commodity Prices in the United States and England Expressed as Percentages of Figures for 1913.

*From the *Federal Reserve Bulletin* for October, 1921.

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